The Builder.

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Wolverhampton Congress of the British Archæological Association.

NOTWITHSTANDING indifferent weather, the British Archæological Association have been spending a useful and satisfactory week in Wolverhampton and its neighbourhood. When it was first arranged to visit this part of England, the Black Country as it is called, it was said on all sides that there was nothing to be seen, while the fact of the matter is, that the difficulty has been to select what should be omitted from the programme. The approach to Wolverhampton by rail, from London, is not calculated to raise expectations: the scene is one of ruin,—all black and irregular: furnace chimneys, smoke, masses of *débris* from the foundries, are the prominent elements of the picture. No order, no regularity; beauty nowhere—all ruin. And yet from this ruin comes wealth: call Earl Dudley into court to prove it if necessary. Arrived in the town, it is found much brighter in parts than could have been anticipated. Of its "slums," it is not intended to speak now, but we shall have something serious to say about these on another occasion. Every endeavour ought to be made in a town like Wolverhampton, to bring in art to its aid, and yet one of the speakers, on the first day, was found saying, and with truth:—"There were many things in Wolverhampton calculated to strike the eye of a stranger, and one matter which had struck his attention very particularly was the fact that in an important town like this, where art formed so great a feature in connexion with the chief manufactures of the town, although there was a school of art in the town, yet from the inquiries he had made, he found that it very much lacked support, and was in anything but a flourishing condition. He should be very glad if a few words like these addressed to the working men of the town, or to those who had the leading of them, would induce them to make an effort to alter this state of things. It was a matter of almost reproach that in Manchester, Rotherham, Sheffield, and many other towns, more attention was paid to the making of money than to the promotion of happiness. He did believe that the cultivation of art, through the mediums of schools of art, established in our large manufacturing towns, and thus adapting it to the various modes of spreading that which was beautiful, he believed that this would materially conduce not merely to the physical good, but to the happiness of the people."

The Mayor and Corporation received the Association with much apparent satisfaction.

The Earl of Dartmouth, the president of the Congress, delivered an inaugural address, which was listened to with much interest. Wolverhampton, the president said in the course of it, had long been distinguished and remarkable for its productions in metal-work. Those who had visited exhibitions of late years could not have failed to remark the admirable specimens of lock-work exhibited by the artizans of Wolverhampton. Besides that, going back rather more to archæological times, passing over the period when shoe-buckles were worn, and when gentlemen walked about in full dress, with steel-hilted swords by their sides, which were the production of Wolverhampton, they might go back to the period of the civil wars, a period which he thought would, during the excursions of the week, be vividly brought to their recollection. In this town itself there was a very strong Royalist feeling in former days; he believed he was right in stating that the Goughs of the Old Hall were conspicuous as energetic supporters of Charles I. in those troublesome times. He had alluded to Dr. Plot, and perhaps he might say, by way of a parenthesis, that he very much regretted indeed, in looking over the magnificent engravings which adorned Dr. Plot's volume, that so many of the old Staffordshire houses had passed away, and been replaced by what some considered more tasteful, but what he thought perfectly atrocious buildings, considering what they replaced. So much was this the case that he was almost inclined to shut up the book in despair, and regret that a period of such Gothicism had intervened between the time of those old houses, as represented in the engravings, and the present. Passing on to another topic in connexion with the history of the county, his Lordship remarked that some of them who had read the London papers might have thought that the county gentlemen and magistrates of Staffordshire were extremely unworthy of books, that they had had a very magnificent library offered to them, and had done nothing towards availing themselves of the offer. He was happy to tell them, however, that all difficulties had passed away, and that the Salt Library was now the property of the county in every sense of the word. On the following day he believed a meeting of the committee would be held at Stafford for the purpose of appointing trustees of that valuable gift. He need not enter into the reasons for the delays that had taken place now that they were overcome, but he thought they, in Staffordshire, had reason to be exceeding grateful to many gentlemen who had taken up the question, and he would particularly refer to Mr. Sneyd and Mr. G. Wrottesley, to say nothing of their excellent chief constable, Captain Congreve, who was half a Staffordshire man, and who had taken a very active part in bringing the matter to a successful issue. He hoped that if the British Archæological Association ever visited Staffordshire again, the Salt Library would be ready for their inspection. He merely mentioned this to show that they were not so black as they had been painted, although they lived in a Black Country; but, on the contrary, they had a large appreciation of objects of art and antiquity. Referring to the programme for Tuesday he found that one of the places to be visited was Lichfield. He would say nothing about the cathedral, but when they saw the grand west front of that beautiful edifice disfigured, as he must call it, by stucco, they would, he thought, join with him in the hope that the day was not far distant when it might be replaced by solid, durable stone. In the cathedral itself they would find many old monuments well worthy of their attention. Then, again, they must remember that they would be in one of the most ancient cities in Great Britain, situated as it was so near to the great Watling-street, which was one of the most ancient roads in Britain.

Archdeacon Moore, when moving a vote of thanks to the Earl, said,—Earl Dartmouth had expressed a great desire to see the plaster upon the west front of Lichfield Cathedral replaced by stone. No one could more desire to see that done than he (the archdeacon) did. It could only be done at a vast expense; but he believed that if the dean and chapter were permitted to make an agreement, funds would be found for commencing the work, and no doubt all persons in the county who took an interest in the work would assist in its completion. That front was a great warning against some sorts of hero worship in general, and against plastic worship in particular; but still it was the best specimen of plastic work to be seen. Yet it was plastic, and so far bad; and he hoped that there would be no more such plastic work again; and he would be glad to see the noble front of that important edifice of the grand old Church of England which was so much and so seriously indebted in these days to the Earl of Dartmouth, once more stone and no longer plaster. His lordship had said that there was little to be seen that was picturesque immediately around where they were assembled; but he (the archdeacon) thought that any one with an eye for the picturesque might there find much that would interest it. When he went out on what people facetiously termed his "steeple chases" (visiting and inspecting the churches), he could find even among the tall chimneys and the whirl of their machinery much that was picturesque, amid all their smoke.

A Vice-President of the Association, speaking to the same resolution, observed that it seemed to him that a visit from such an association to such a town was most appropriate. Here was a place which seemed so wholly of the present, yet was so largely connected with the past; and it seemed to him most important that all that recalled to them the past should be preserved, and that they should not permit their old landmarks to be swept away. Here they were executing works in iron and other metals, wherein much beauty was not always obvious; while the remains of old metal-work showed them a beauty of workmanship often wanting in the work of these days. Even then for the sake of their present work, it was well for them to preserve that which recalled the past. Some told them that such associations as that now visiting the town had done their work, but he thought that that association was more needful now even than twenty years ago; for every day time itself was sweeping away the remains of the past, and where man lent his hand to the spoiler's work there was little hope of preservation. By such visits as that now being paid to Wolverhampton, inhabitants of towns were led to look more closely and curiously at the remains of the past, and to conclude that that which was worth the visit of so many from so far was worth preserving.

At the ancient parish church, to which all then repaired, a paper by Mr. Parke was read, which gave an able sketch of the history of the structure, together with some extracts from a report by Mr. Ewan Christian, who restored the church some years ago, and rebuilt the chancel. The nave is of the Perpendicular period, and is remarkable for its dignity and majesty. It is disfigured by ugly galleries and inappropriate seating, the removal of which is contemplated. A carved stone pulpit, formed round one of the south pillars of the nave, is noticeable. It was built with the column, notwithstanding the opinion of the rector (the Rev. J. H. Iles) to the contrary; the courses run through. An interesting monument to Col. John Lane, who helped King Charles to escape after the disaster at Worcester, some of the old screen-work, and a bronze statue by Le Sueur of one of the Levisons, interested the visitors, and doubtless some of them noticed in the porch a marble tablet, dated 1732, the inscription on which commences thus oddly:—"Near this place lies Charles C. Phillips, whose absolute contempt of riches, and inimitable performances upon the violin, made him the admiration of all that knew him."

The Ancient Pillar.

The great point for discussion, however, was the pillar in the churchyard.

Mr. E. Levien, M.A., said it was believed to be a Danish column from the remains of what were supposed to be the figures of ravens sculptured upon it; ravens having been held in great veneration by the Danes as the companions of their god Odin, as eagles were believed to be those of Jupiter, the owl of Minerva, and the Dove of Venus, showing how the gods of our forefathers were believed by them to be gods of an ornithological tendency. The Danes had two emblematical ravens—one indicative of victory and he other of defeat; and the question was which of these two ravens seen by some on this pillar were. It was known that the Danes committed excessive ravages in Mercia, in 1385, and it was thought on the one hand that this pillar was put up to commemorate some victory of that date, as it was not usual for people to commemorate their defeats. The Saxons on the other hand, were quoted to show that the Danes suffered an enormous defeat in this part of Mercia; but that was the Saxon version, while there was no doubt that the Danes succeeded in firmly establishing themselves here. The cross, he thought, might have been erected to commemorate the same victory; but whether of the Danes or Saxons remained undecided.

Mr. G. M. Hills remarked that whether crosses were erected to commemorate victories he would not pretend to say, but it was well known that in ancient times crosses were erected merely as landmarks. Without any idea of a religious character, it was well known that the Romans raised crosses as landmarks; in fact, it was one of their rules, when surveying a country, that crosses should be erected at special points. It was very probable that a cross, occupying the position which this did, belonged to very ancient times, but its date depended very much upon what meaning they attached to the words "very ancient." He had no hesitation in saying that this cross was of great antiquity; but he failed to discover anything known of the Danes upon it, or to see anything of the ravens of the Danes about it. They would observe certain open spaces in the lower part, and then certain figures in the form of half a lozenge. Five of these could be traced half-way up, leaving five spaces below for a figure under a canopy. In one of these spaces there were distinct traces of a figure. The figures to be traced above those canopies showed that it could not be a Danish, but that it must be a Christian monument. He found in one the ox of St. Luke; in a second, the angel of St. Matthew; in a third, the lion of St. Mark; and in a fourth, the emblem of St. John; while the fifth was filled with scroll-work. This showed that the design was to give the symbols of the four Evangelists, and from this they could venture to hazard a notion of what filled the spaces below the canopies; and from the absence of symbol in the fifth canopy, they could venture to assume that in the fifth space the Crucifixion was represented. The enrichments above were merely scroll-work. with various animals,—griffins and others,—represented in grotesque form and of monstrous description. He thought the date of the cross was about the twelfth century,—the beautiful scrolls would be the work of that century. He had examined the top of the column, and found evidence of provision for the insertion and fixing of another stone, probably a cross. He had no doubt it was Norman work, and belonged to the Norman period, namely, the twelfth century.

At the public dinner afterwards (which was genially presided over by Lord Dartmouth, and passed off very satisfactorily),

Mr. Godwin, in the course of some observations, said he gave Mr. Gordon Hills very great praise for the admirable acuteness with which he described the old pillar in front of the Collegiate Church; still he (Mr. Godwin) was bound to say, as an old Saxon himself, that he could see no reason why the cross should not be of the Saxon period. It had the baluster shape, which was generally understood to show the work of an earlier people than the Normans, and, without expressing any decided opinion as to the exact date, he must say that he could see no reason in the world why the cross should not be considered as of Saxon origin.

Mr. Edward Roberts, speaking at the same dinner, thought that although it might be true, as had been said, that the cross belonged to the twelfth century,—and he must say that he himself had not examined the details of it with any particular care,—still his impression was that it was Saxon; in other words, it might probably have been executed by Saxon workmen, and not by Normans, just before or after the period of the Conquest. They all knew that between the Saxons and the Normans there was a very slight line of demarcation, and that what had been for centuries regarded as Saxon now turned out to be Norman, and things that had been regarded for centuries as Norman turned out to be Saxon. Therefore it was quite possible that this cross was executed by Saxon workmen just at the turn of the century where the terminaries of the mouldings showed the character of the age to which they belonged. They had certainly no desire to lessen antiquity, as was shown by their having put eighty years of age on to the central tower of the Collegiate Church.

The matter is so interesting that we shall return to it and give a view of the pillar hereafter.

The Etocetum of the Romans,

now called Wall, was amongst the places visited on the second day. We are not giving a full account, and shall merely touch on a few of the more interesting incidents of the week. Excavations had been specially made at the expense of Col. J. N. Bagnall. Mr. Molineux having collected the visitors around him on the rising ground, which is marked as the site of the old city, reminded them that Etocetum was one of two large Roman stations established in Staffordshire, and was at the junction of two Roman roads—Watling-street and Icknield-street. By what means Etocetum became a buried city he did not know. It did not appear to have been occupied by the Saxons; in the word "wall" they had, he considered, evidence of its early ruinous condition. He referred to the notices of the station by Camden and Dr. Plott, who spoke of coins of Nero and Domitian having been found there. Plott spoke of the city as being in a field called the Butts, by which name the field they were now standing in was known to that day. It was believed that the city or its walls extended to Chesterfield (a village visible between the trees). Shaw also described it as a Roman station of large magnitude, and as having been erected about A.D. 120. He exhibited some relics which had been excavated from the holes at their feet on the previous day—pieces of plaster, coloured outside, red, white, and yellow in hue; some nails and pieces of large tiles turned up at the side; pateræ, a brass stud, pieces of draining pipes, a fowl-bone, &c. These excavations had been made in anticipation of a visit from the British Archæological Association. A few days since some excavations had been commenced in the Castle Croft, and a chamber had been laid open which it was difficult to identify. Whether it was a public bath, or what it might have been was an open question; but he thought there was no question that the whole of the district was filled with buildings. They found no coins, but some black Roman pottery, and some concrete made of Walsall lime and pebbles. They also laid bare a wall, and found it built of sandstone and concrete, and 3 ft. thick, running north and south. In the orchard below they had traced a wall for 120 yards in length, which was 9 ft. thick, and they hoped to follow both that and the west wall until they came to one of the gateways by which the town was entered. He had no doubt that Etocetum had originally a frontage of a mile to Chesterfield. They looked forward to the discovery of the cemetery with much interest, and it was intended to prosecute these excavations up to Chesterfield, and to show, as he believed they could, that they had at Wall as interesting and important a Roman station as the Shropshire people had in Uriconium.

Elford Church, Elford Lowe, a luncheon at Haselour Hall, and other incidents kept the members too long from Lichfield Cathedral, so that Mr. Gordon Hills was forced to condense overmuch his account and comments on that most interesting structure. To what he did say we may return.

Early Constructions.

At the first evening meeting, held in Wolverhampton Town-hall, Mr. J. S. Phené read a paper on Uniformity of Design in the earliest British and Continental Constructions, illustrated with a number of carefully prepared diagrams. He commenced by drawing attention to the uniformity which prevails in the remains of early British places of occupation, which, notwithstanding their rareness and wide separation, arising from removal for agricultural purposes, still retain features which make them so identical as to represent the work of a single people. He considered this by no means affected the question of another race having immigrated amongst them, or even been sparse pre-occupants of Britain, and the very fact of the extreme distances between British remains of the same design and class, for the illustration of which he selected the most remote places,—from the Hebrides to Kent, and from Northumberland to Cornwall,—evidently formed a strong support to the idea; as it was not, he thought, probable that the same race could have occupied these various remote points without also occupying at least a large portion of the intermediate space. Their forts, dwellings, utensils, and ornaments, he said, had a common uniformity of design, not only with themselves respectively, but with each other; nor was this accidental, for he found articles of apparently common interest having a superior meaning attached to them. Thus the quern was, for some reason an emblem of eternity, while the gold circlet surmounting some of the Irish monoliths found in the peat morasses evidently had reference to solar worship. He then compared these remains with some bearing the same features in other countries, including very similar constructions on the Alps. He dwelt upon customs connected with the preservation of the human heart in Britain, and showed approximating religious customs in connexion with the heart as almost universal. He drew attention to certain parallel indications in the sculptures of Easter Island, Egypt, America, and Britain, at least so far as vastness of design is concerned; to the sculptured solar altars of Nineveh, very similar emblems being found in this country, in Mexico, Easter Island, and elsewhere; and also to the remarkable incisions in the rocks of Northumberland, Ilkley, Scotland, New Grange, and Carnac, which were also to be traced along the Mediterranean route as far as Greece, and even had representatives in India and America.

The Chairman (Mr. Godwin) said whatever they might think of the theory of sun-worship, he was sure they would unite in a feeling of gratification that Mr. Phené was applying himself to investigations upon a subject of so much interest. The uniformity of those early structures all over the globe was scarcely to be doubted, nor was their antiquity. But Mr. James Fergusson, whom they all held in the highest esteem, seemed in the most extraordinary way to have shut his eyes against indications and proofs of their great antiquity. Because he finds evidence that some such structures were of tolerably modern date, therefore he would have it inferred that they are all of modern date. He (the Chairman), however, was quite unable himself even to read the Bible without finding ample proof of the early existence of that exact description of structure of which he (Mr. Fergusson) spoke as modern; the monuments of unhewn stone, the setting up of single stones, the forming of a cairn, and so on. Mr. Phené had alluded to some singular structures, especially in Scotland. It was to be hoped that other gentlemen who had applied themselves to the same branches of antiquity, with the view of bringing their minds to bear upon this particular subject, would help in guiding them to a true solution.

Mr. Burgess read a paper on "Ancient British Remains in the Forest of Arden." He explained that the forest of Arden, to which his paper referred, was a wide district of England, with (according to Drayton) "one hand touching Trent, the other Severn side"; and his remarks applied to the remains of earthworks and British forts to be found in different localities and in lines within that area. He endorsed a good deal of what had been advanced by Mr. Phené as to the uniformity of these works, and exhibited drawings of earthworks at Brinklow and Seckington. He believed these were not Saxon earthworks, but that they belonged to an earlier period.

Mr. E. Roberts observed on these papers that the more he saw and heard of this subject the more he was impressed with the similarity of the whole of the productions of the pre-historic period. He had gone over to see the Paris Exhibition almost for the purpose of studying the illustrations of the different periods of labour, and he was amazed at the precise similarity of all the tools exhibited there from all parts of the known world. He thought they could not come to any other conclusion than that there was a larger amount of intercourse between nations in the earlier days than they had been inclined to believe.

Here we must break off for the present.

Mahogany wood has been discovered in the Guinea region of Africa.

SOME HOUSES IN SEVEN DIALS.

Considerable improvements have been made in Seven Dials and the rest of the parish of St. Giles-in-the-Fields, since we first commenced those explorations and illustrations of the Shadows of London and our large towns, which, not to speak in any degree arrogantly, have assisted in producing the present state of public opinion on the subject, and the increased attention now paid to sanitary reform. We could point to some dark pictures of portions of this neighbourhood, scattered through our earlier volumes, and afterwards gathered into little books, and then reproduced far and wide by a more or less sympathising daily press. Seven Dials, as our London readers know, is an open space in St. Giles's, whence radiate seven streets, and had its name from the circumstance that there was a Doric column in the centre of it, which bore on its upper part seven sun-dials, one of them facing each street. As we find in "Trivia,"—

> "Where famed St. Giles's ancient limits spread,
> An inrail'd column rears its lofty head;
> Here to seven streets seven dials count the day,
> And from each other catch the circling ray."

The column was removed a hundred years ago but the name remains: words are more lasting than things. Well, one of the seven rays from this central point is called Great St. Andrew-street, and here, notwithstanding the improvements we have alluded to, are still to be found dwelling-places in which there can be no healthy life;—places where virtue is difficult, and decency impossible. Nos. 40, 41, and 42 were of this class, and had gone on from bad to worse, until they were utterly unfit for human habitation, and past hope of any aid from the commercial principle; the basements were full of decomposing rubbish, the drains stopped, the floors and ceilings broken through, the roofs were gutterless, the walls in part saturated.

By a series of fortunate accidents, so to speak of a number of generous acts, the Society for Improving the Condition of the Labouring Classes, better known, perhaps, as Lord Shaftesbury's Society, came into funds at their last general meeting, applicable to such a purpose, and have descended on this neglected and terrible piece of property. Mr. Eborall, the builder, under Mr. Eyton, as architect, has been set to work to render the houses fit for human habitation. We do not know if it be intended to make any re-arrangement of the premises so as to fit them better for occupation by a number of families, or merely to repair them and introduce such sanitary requirements as may be practicable in their present form. We shall watch the work with interest, and report upon it hereafter. The Society has done good service in this same direction before, and it should not be forgotten in judging of its proceedings that it seeks to provide healthful and humanizing dwellings for the very poor, which in London can only be done by so great an expenditure, and accepting so moderate a rental, as put large dividends quite out of the question.

DIAMONDS, AND THE IDEA OF BEAUTY IN NATURE.

It would be a somewhat curious speculation to go into to theorise as to what sort of a being man would have been had he had no such faculty conferred upon him as the *perception of beauty*, and the desire to *create* it. How very different would the external world have looked and seemed to him. All the colours and forms of nature would have been to him as nothing. It would have mattered nought how things about him looked. Would he have been the happier for it, or no? For we are told in a very impressive way that "he who increaseth knowledge increaseth trouble;" and perhaps it is so. But, however this may be, there is no help for it, and the love of the Beautiful is, without doubt, an inherent faculty in human nature, and cannot be got rid of, and will in some way or other be gratified,—nay, so powerful is it in some minds, that no cost to themselves seems too great for its gratification, and *they* will turn the very world itself over to find some *new* beauty. It would be a difficult thing to say which is the most beautiful object in nature hitherto found. Some will declare for one thing, and some for another; but for a combination of rare and unique qualities, and for the comprehension of much in little, the *diamond* is perhaps the most beautiful object in existence. The subject is a most curious one, and will show, even in these few thoughts on it, how much there is in nature and art yet to be theorised about, and to be inquired more deeply into. Most people are aware that the diamond as seen in rings and in other articles of jewelry, and as cut into certain regular forms, is not to be found so in nature. As *dug* up from the earth, or as found amid the sand of a river, it is hardly to be distinguished from a common smooth pebble, or a bit of glass with the rough corners worn off; there is little or nothing of the *diamond* to be detected in it. It is only after "cutting" into some *regular* geometrical form that the magnificent beauty of the stone is to be found. Those *regular* forms into which the diamond is by nature crystallised, the sharp *edges* of which are worn off, and which exist under the rough surface of the rounded pebble, are most commonly the octahedron, and the dodecahedron, and the *multiples* of these: as twenty-four, thirty-six, and forty-eight sided figures. Those who wish to understand the subject of diamond-cutting, we would mention in parenthesis, should make drawings of these figures. The pure octahedron form is not, it may be noticed, so advantageous a form as the others, the loss of weight and size in the cutting of the stone into the brilliant form being much greater than it is in the more numerous sided crystals. But all these *regular* forms are much better for the purposes of the jeweller than the more irregularly-shaped stones, with jagged corners, or of forms nearer to the cylindrical or prismatic. It is also noteworthy that there is a form of crystallisation very frequently to be found in the South African diamond, known in mineralogy as the "Maccle crystal." It is *triangular* in form, and consists of two distinct crystals, welded together by nature. While speaking of African diamonds, about which there has been so much talk lately, it may be noticed, as a curious circumstance, that they are *not quite* white, or colourless, but of a very pale, and, to our thinking, beautiful straw colour, even adding to the beauty of the gem. The famous Golconda diamond is colourless. In the cutting of a diamond, without which the beauty of the stone is hidden away under a ragged coating, it may be generally calculated that about one-half, a little more or a little less, is lost, so that it is only at a great sacrifice that the *beauty* of the diamond is made to show itself.

It is a little difficult to explain without a number of diagrams, the curious nature and effect of this diamond cutting, and to hint at what would seem to be a shortcoming in it, if the production of pure beauty be the object sought. A "brilliant" diamond, to give an example, may be thus described. The *top* of it is an octagon, and on the size of this octagon, or "table," as it is termed, the value of the gem to a great extent depends. From each side of this octagon, at an angle of about 45 degrees, spring triangular facets; connecting these are square, or nearly square, ones, and between these again are double triangular planes. In all, therefore, there are thirty-two facets, or planes, at angles to each other, and which together make up the *upper* face or top of a "brilliant" diamond. It is from these facets or planes, round the central octagon or table, and which is flat, that the magnificent sparkle comes which makes the beauty of the diamond, and which is to be got from no other substance in nature hitherto discovered. It is produced, as many will recollect, by the great *refractive* power of the substance of the diamond, and the sight of which suggested to Newton that the diamond must be combustible. The diamond is pure carbon, or charcoal, like a bit of burnt wood, and nothing else; and perhaps in nature there is nothing more surprising than the fact that such a substance as charcoal, black and opaque, and dull as it is, should exist in so different and wonderful a form. Thus far the upper surface or top of a brilliant diamond. The under surface, or bottom of the diamond, mostly hidden in its setting, is equally noteworthy. It is the same as the top, with the exception of the table, which, instead of being as large as may be, is extremely small,—indeed, almost a point. Hold up a large diamond to the light, and the whole of it will appear almost black and impenetrable, with the exception of this small octagonal space; but through this the light comes, and objects may be seen as through a small window. It is not, therefore, by transmitted but by reflected light, and by the blending of the light that the beauty in the diamond is made to manifest itself. It is only by carefully examining a good stone, or by making a careful drawing of one, that these curious facts can be usefully tested. The knowledge gained will amply repay the trouble it takes to do it. Nothing can possibly surpass the beauty of a clear, well and accurately cut diamond. You are never tired of looking at it; it is always changing, and never seems to look twice alike.

We cannot help thinking that something, and perhaps not a little, yet remains to be accomplished in the cutting of diamonds. A very large diamond, as the Kohinoor or the Regent, is a somewhat disappointing object to look at, after the sight of a smaller stone, finely cut; for the facets are too large, there is too much of the multiple mirror in them. It is in the intensity, and exceeding brightness of the infinitely divided and separated coloured sparks of fiery light, that the marvellous beauty of the diamond lies; and where these are too large, or too wide apart, a great deal of the real beauty and exquisite feeling of the gem is lost. Diamond-cutting is an art and mystery in itself, and there is a "regular way" of doing the work which it seems to be almost impossible to improve upon. So, indeed, you are told. It is, too, a very costly process, so that *experimenting* is hardly to be thought of. We have gone a little into this curious subject, and have come to the conclusion that the art and mystery of diamond-cutting is not among those things that are "progressing." It is, as it seems to us, something like fiddle-making: it is not a mere trade, it is a *fine art*, and takes the hand, and eye, and brain of an artist, and an artist-workman to do the work. A "Straduarius" is the man that is needed; a fine and knowing workman, with hands as well as brains, and brains as well as hands,—both together, and together only, making the *artist-workman*.

It is not only the artistic beauty in a diamond that makes it remarkable, and worth some study; there is also the *value* of it; and it is this, indeed, that makes the subject so full of wonder, for in no other substance or thing in nature can you compress so much "value,"—commercial value, even, as in a fine diamond. Without taking into account the very large diamonds, such as the Kohinoor, the Regent, the great Russian diamond, and a few others which have an almost fabulous value, we may well pause to wonder at the value, in other goods and chattels, of a small stone, say of 500*l.* or 1,000*l.* in price. Why is this? It is among the mysteries of nature. The wonderful beauty enshrined in the stone responds to the wonderful sense or perception of beauty in the human mind, and actually compels the sacrifice. What would the "sustained splendour" of modernism do without the diamond? Gold itself could not make up for the loss of it! Diamonds are valued according to size; and it may interest the curious to know that the very latest quotations are 4*l.* per carat for rough diamonds weighing ½ a carat each; for 1 carat, 4*l.* 10*s.* to 5*l.*; for 10 carat stones, 26*l.* to 28*l.*; for 20 carat stones, 40*l.* to 42*l.* per carat, and so on to those fabulous amounts which the world now and then hears of. But whether the diamond be great or small the principle is the same: it is a price paid for the sight and possession of a thing of beauty and of rarity, *and that only*; for of the value of the diamond as a mere working tool to cut glass, and for other useful purposes, we need not here speak.

It is impossible to talk of the diamond without some thoughts of its "setting." Diamonds cannot be worn and can hardly be looked at without they are in some way or other "set" or fixed into some other substance, as gold, to make them wearable. Indeed, the art of the jeweller consists in the setting of gems, and the devising of forms to enhance, if possible, their beauty, and to bring them together. Unfortunately the art of the jeweller is little at present above a trade. The work done is all very neat, and highly polished, and carefully filed down, and finally smoothed; but as a *fine art*, and as dealing with the richest and rarest of substances in nature, it lacks almost everything it ought to have. Let any one who doubts this examine carefully, and minutely, the engraving or *chasing* of an ordinary finger-ring, or locket, or the back of a watch, no matter what the price: no one will deny it to have neatness, and care, and finish, but where are the drawing and sculpture in it to be found? We had almost said where is the designing power in it? Whole rows of watch-backs may be looked at on which certainly no expense would seem to have been spared, and it will be in vain to look for inventive *drawing*. Unfortunately it is a trade. Things like these are left to the mere workman. The *designer* and thinker will be found to be a man working out his ideas, such as they are, "on *paper*." Perhaps he would hardly condescend to *write upon gold*. He certainly never does do so;

if he did we must see it. If the art of jewelry be a fine art, as we think it is, then most surely is it one of those things that are not "improving" in an artistic sense, though they may be in a *productive* one. More jewels may be made, and cheaper, and more diamonds and rubies may be cut and polished, and put into gold cases, to hang round pretty necks and fair arms, but most certain it is that they will not bear the looking into which the older and rougher work of bygone days will, when machinery was not, and tools were fewer, and human labour was not so divided; and when every workman was asked personally for his work, his own work; and when, too, he *thought* out his own work as well as *executed* it. If *buildings*, on a great scale, show, as they undoubtedly do, what the old workman was without machinery, to almost do his work for him, then also may the minute work of the jeweller and the diamond-cutter show what is done, and what is yet to be done, with gold and gems.

THE ROYAL ARCHÆOLOGICAL INSTITUTE AT SOUTHAMPTON.

The inaugural meeting was held at noon of Thursday in last week, in the Hartley Institution. The Bishop of Winchester, the president for the occasion, was unable to take the chair, having been unexpectedly subpœnaed to attend a trial for libel between two quarrelsome neighbours at Guildford. In his absence the permanent president, Lord Talbot de Malahide, F.S.A., temporarily occupied his place. The room was very well filled for an opening day. The mayor and corporation attended in state to welcome the officers of the Institute, and among the gentlemen present were the Marquis of Bristol, Lord Henry Scott, M.P., Sir Stafford Carey, Sir E. Smirke, A.M., and some other persons of note.

At three o'clock the party reassembled at the Bargate, in the centre of the town, and which formed a portion of its original defences. Here Mr. J. H. Parker pointed out the peculiarities of the building. After inspecting the interior, which presents little of interest to the antiquary, Mr. Parker conducted his party along the site of the walls, and pointed out an old water-gate. The inspection of other local objects of interest occupied the time till dinner-hour.

The *soirée* given by the Mayor of Southampton at the Hartley Institution in the evening of the opening day brought together a very pleasant party, the mayor and Mrs. Buchan having a surprise in store for many of their guests. Their entertainers had prepared a concert for their delectation. At the close of the musical performance, the Bishop of Winchester made a pleasant speech to the guests from the front of the orchestra, assuring them that he neither meant to sing a song nor play on the double-bass violincello, but to call upon them for three cheers in honour of the mayor's birthday, which the bishop led with hearty good will. The party was attended by a large number of the officers of the American fleet.

On Friday morning there was a meeting of sections at the Hartley Institution. The bishop presided for a short time, and introduced Lord Henry Scott, who read them an introductory address in the Historical Section, confining his remarks to a history of the county of his adoption. Lord Talbot de Malahide, in moving a vote of thanks to Lord H. Scott, which was carried by acclamation, endorsed his lordship's observations as to the want of a good county history and a good archæological association, which latter he considered would greatly help to accomplish the former. Kent, Somerset, Sussex, and Wilts, and nearly all the counties in the south of England, had good archæological associations, and it would be a proud remembrance on the part of this Institute if they should be in any way instrumental in giving an impetus to a similar action in Hampshire.

The reading of another and shorter paper brought the morning's proceedings to a close, and in the afternoon the archæological pilgrims wended their way as far as Romsey and Porchester, and on the route some of them took the opportunity of inspecting Broadlands, which, by the courtesy of Mr. Cowper-Temple, M.P., they were enabled to do. Broadlands, formerly Lord Palmerston's seat, is situated on the top of a slope, commanding a good view of the Test. Within the house are some fine paintings of the old masters, and a monument by Flaxman to Viscount and Viscountess Palmerston. Porchester, the Portus Magnus of the Romans, is said to have been the landing-place of Vespasian. Since then the sea has much receded from it. The present quadrangular fortress is Norman, partly erected on the old Roman works, and exhibits in a portion of its walls specimens of Roman material applied in later construction. The keep has two massive Norman towers. The parish church of St. Mary is situated within the outer part of the castle area. The west front contains a Norman window, and much enriched doorway. At Romsey the vicar, the Rev. E. L. Berthon, gave a running discourse on the abbey, and exhibited the result of recent excavations. At Porchester, Mr. G. T. Clarke was the *cicerone* over the castle.

At a general meeting of the members of the Institute, Exeter was selected as the place of meeting in 1873.

Next day, there was an excursion through the New Forest to Christchurch, the party visiting objects of interest in the New Forest on their return homewards. They started from Southampton at nine o'clock, and on their arrival at Christchurch proceeded to examine the antiquities of this pleasant and ancient town, which is watered by the crystal Avon, so famous for its salmon. The chief object of attraction, of course, was the priory church, which is said to have been founded on the site of a Roman temple. In 1150 it was converted into a priory of Augustinian monks. The castle, a little to the north of the priory, has only two ruined walls of a small keep left standing. After spending some time in the examination of the church and the ruins of the castle, the party "refreshed" at the town-hall, and then returned by rail towards Southampton, stopping *en route* at Beaulieu-road station, and thence by turnpike road to Beaulieu. Here they were received by Lord Henry Scott, M.P., and the Rev. F. W. Baker, who conducted them over the remains of the abbey. The gatehouse of the latter is now the residence of Lord H. Scott, and is called "The Palace." This was an abbey of the Cistercian Order, founded by King John in 1209. Near the centre of the hospitium was the access to the conventual buildings. There are relics of the sacristy and chapter-house, and a passage and portion of the monks' refectory. The ground-plan of the ancient convent church has been traced by the stones on the sites of its pillars. The parish church is the ancient refectory. There is great variety of sculpture in the intersections of the ribs of the roof representing the Montagu and Buccleuch arms, the Beaulieu arms, &c.

At a *conversazione* in the Ordnance Survey-office, some interesting objects were shown. Among these were flint implements from the drift found near the Southampton Cemetery, 80 ft. above the level of the sea, and supposed to have been deposited there about the commencement of the glacial era; a model of Ben Nevis (4,406 ft. high, the highest mountain in the United Kingdom), and of the surrounding country; a model of Stonehenge, with drawings and photographs exhibited by the electric light, and of some cromlechs; plan of Clausentum, the fortified station of the Romans at Bitterne Manor, Southampton; plan of the town of Southampton and of its ancient walls, and plan of Netley Abbey, with photographs; plan of Silchester; model and plan of Jerusalem, with photographs shown by the electric light; model of the great pyramid of Egypt to illustrate the use of its interior arrangements. Photozincographic *facsimiles* of Domesday Book, of the national MSS. of England, Scotland, and Ireland, with some very interesting originals of the latter, &c.

On Monday, after a morning sectional meeting, at which an address by Sir Edward Smirke, president of the Section of Antiquities, on the records of Southampton, was delivered to an audience not large, and followed by an illustrated address upon Silchester by the Rev. J. G. Jones, Winchester was visited, and the cathedral and other objects of interest in that ancient city inspected.

On Tuesday, the members of the Institute visited Silchester, which derives its name from the Saxon "Sil," great or best, and the Roman word "castrum," and has been described by us before now. It has the largest area of any of the Roman fortifications. The walls at present are about 13 ft. high and 8 ft. thick. The city had four gates,—north, south, east, and west,—and beyond the wall was a deep ditch, and beyond the ditch a vallum 15 ft. high. The amphitheatre is situated outside the city, 150 yards from the north-east corner of the wall. The members also visited the remains of the Chapel of the Holy Ghost at Basingstoke, and Basing House, formerly the abode of the Marquis of Winchester, by whom it was gallantly defended against the Parliamentarians, and when stormed was utterly destroyed. In the evening the members returned to Southampton, and held an evening session for the reading of papers at the Hartley Hall.

THE BISHOP OF WINCHESTER ON ARCHÆOLOGY.

At the Southampton meeting of the Archæological Institute, the Bishop of Winchester said he was sure they would all sympathise with him in his having to deliver an inaugural address in the middle of the meeting, which was like a stale egg. They all knew what a stale egg was, and he had to produce before them that day an egg which had evidently been "sat" upon; and he hoped they would not sit upon him for doing so, for then his only chance would be a long rope, whereas he had only the shortest possible "yarn" then allowed him. It was evident that what he should have to speak about then was the general purpose and idea of these gatherings and meetings, and the good that they and he might be able to deduce from that particular one. Many people, when an antiquary was coming to them, expected something amusing, and sometimes rather absurd, but there was a far deeper side to archæology, upon which he should like them to rest. Perhaps it was stated almost as beautifully as language could do it by the great Lord Bacon, in his book "Advancement of Learning." He said, "Antiquities are history diffused, or some remnants of history which have happily escaped the shipwreck of time"—a beautiful idea in itself; and then he went on to speak of what constituted the true antiquary and what he might do, and set a deep view of the whole of their pursuits before them. Returning to his old idea of the shipwreck of time, he spoke of antiquaries as persons who, "by an exact and scrupulous diligence and observation, out of monuments, names, words, proverbs, traditions, private records and evidences, fragments of stone, and the like, do save and recover something from the wreck and deluge of time." He (the Bishop) did not agree with him that it was history diffused. It was more especially the establishing of the remaining facts out of which history had to be formed; because history itself, as they commonly understood it, was far more a theory about facts than a mere relation of the facts themselves. Such a pursuit as they were engaged in was full of every advantage, especially to a people in a higher state of civilisation, and that, he thought, every reasonable man would see in a moment. There could be no future to a people about whom there had been no past: the future developed itself just as it did in life in the world around. The future carried it out of the past. Dead vegetable matter made the humus; into that the roots of the living tree were struck; and because there had been vegetation in the past there was vegetation in the future. And so it was with regard to the higher life of a nation. Unless there was a past to which it could refer, there could not be in it any high sense of its own mission in the world. New peoples were predatory—they came as the Goths of old, to plunder and overrun countries which had a past, and extinguish them, and as they acquired for themselves a past they began to develope a future out of the past, and so that which led them to love and venerate the past did, in fact, give them the best standing-point for helping in the present to make provision for the coming of the future. They did not want to bring the old times back again, but they would understand the present around them far better if they could trace the present back into the past, see what it arose out of, what it had been the development of; and what it contained to serve for the future before them. There was nothing which so tended to keep the mind of men from rash experiments, from those things which destroyed nations altogether by the sudden imagination crossing the mind that some very great result might be obtained by some entire subversion of everything. There was nothing on the one side that more guarded a people against that than by having a veneration for the past, and nothing more truly directed those shapings of the present, which every reasonable man knew he had to give way to, than the being able in the new shaping to have before him the old, out of which he was going to shape it, so that his shaping might only carry out more completely the purposes for which that he was now altering began

to exist. They might see all that he had ventured to suggest when they looked round the grand old cathedral they were to visit that day. With it grew up the life of England, out of the remains which were left at the Saxon invasion, which extinguished the earlier Christianity. Out of the restoration of the Saxon element as it became historic, developing itself through a series of great priests and princes, the wonderful building had been erected.

THE RESULTS OF ARCHÆOLOGICAL TEACHING.

An old correspondent from the Royal Archæological Institute, writing from Southampton, says:—

I do not send you any notes on the present occasion, first, because this is such a trodden ground; secondly, because the newspapers have been so full of our proceedings; and, thirdly, because I have lost faith in archæology. Twenty-six years have elapsed since the Institute visited this spot,—the Association has, I believe, been here since,—and yet there has not been a local society established, or anything done towards a county history, both of which things we are continually told are the beneficial objects and results of these gatherings. But the greatest outrage to one's feelings is on revisiting the locality to find that there is nothing to notice but two strange works: Lyndhurst Church, by Mr. White, and the colouring of St. Cross, by Mr. Butterfield. The latter is the greatest satire on taste ever perpetrated by a modern architect. The unmistakable sounds of reprobation which were uttered during Mr. Parker's address will, I hope, be communicated to the architect. The joke that passed about was, that after the present thirteen members who enjoy the charity of the founder are dead, they will be succeeded by thirteen clowns; hence the motley on the walls. If such monstrosities as these are all we can show for studies, papers, architectural institutes, and whatever other institutions exist for the development of art, the sooner such institutions be made to come to an end the better. The Bishop's address, which was very good, you may like to give. F. S. A.

THE NEW THEATRE AT THE ELEPHANT AND CASTLE.

The large new building near the Elephant and Castle, which was erected a few months ago for the purposes of a public hall for meetings, lectures, and musical entertainments, in connexion with swimming and private baths, but which has never been completed, is now in process of being converted into a theatre, the original owner having disposed of the building to new proprietors. The building, which occupies a very large area, being about 120 ft. in length, including the space for baths, from the New Kent-road frontage, to the extreme back, is now undergoing extensive structural alterations preparatory to the fitting up and completion of the interior. A considerable portion of the roof of that part of the building which is intended to be devoted to the auditorium department has been removed for the purpose of carrying the main walls to a greater height in order to admit of the construction of galleries and additional tiers of boxes beyond those contemplated in the original structure. The interior from the entrance in New Kent-road to its communication with the intended great hall, which consisted of about sixty private baths approached by stone staircases, and also leading to the upper part of the hall, is being entirely reconstructed. The walls and compartments forming the baths, together with the corridors, have been altogether removed, and the space which they occupied will be converted into a vestibule, with approaches and staircases leading into the various parts of the theatre. The interior arrangements will provide accommodation for an audience of upwards of 3,000, the two tiers of boxes, twelve of which will be private, seating 500, whilst the pit and stalls, which will be of large dimensions, owing to the great width of the building, will have sitting-space for an audience of 1,500, in addition to which there will be standing-room for 200. The amphitheatre and gallery will have accommodation for about 1,000 persons.

In addition to the audience department, there will be large refreshment saloons in the different parts of the building, communicating, through iron doors, with an ample promenade, attached to which will be smoking and refreshment-rooms, together with lavatories and gentlemen's dressing-rooms. In connexion with this feature in the arrangements for visitors, the practice adopted in Continental theatres will be introduced by the ringing of the stage-manager's bell in the refreshment-saloons and promenade, announcing the recommencement of the performances. The interior of the theatre is to be chiefly lighted from sun-lights in the ceiling. The erection of the stage, which will be very spacious, has been entrusted to Mr. Ellis, who has had a large experience in this department of theatrical construction. The principal entrance to the building, leading to the boxes and stalls, will be in the New Kent-road, the pit and gallery entrances being in the Walworth-road, nearly opposite to the Elephant and Castle.

The entire cost of the new theatre when completed is estimated at about 15,000*l.*,—4,000*l.* having already been expended on the building before it came into the present proprietor's hands. The architects are Messrs. Dean, Son, & Co., of Mark-lane, City; and the contractor is Mr. Giles Bennett, of Vauxhall. The theatre is announced, by Mr. E. T. Smith, under whose management it will be conducted, to be opened in September next, and we understand that the contractor has undertaken to have it ready by that time.

THE WORK OF ENGLISH CARPENTERS.

Now that carpenters are prominently before the public, by virtue of the "strike," a glance at the work of their predecessors may have some interest.

The Middle Ages have left us nothing more characteristic of "Old England" than the work of the old carpenters,—old to us, but youthful and gallant enough to the dames and maidens who glanced up at them when they were deftly raising the great oak and chestnut beams that were to group into the glorious roofs we now gaze upon as masterpieces. The closer we look into their work the more we are impressed with its artistic comeliness, sturdiness, and grandeur.

In the fourteenth and fifteenth centuries English workmen seem to have looked upon the roof of a large building as a firmament. They treated it so literally; for they coloured the spaces between the rafters deep cerulian blue, and they set countless golden stars in it; and this firmament they filled, so far as they were able, with an angelic host. They carved angels on every corbel, and high above these they placed angels again. Sometimes they folded their great wings close, with soft, drooping curves; sometimes they spread them out into a bold, wide, glad sweep. Generally they placed a shield, or a book, or a musical instrument in their hands; always they made them expressing adoration, joy, or devotion.

The thoughts of these old workers could not have been sordid, nor even always homely. They overlaid their work, clearly, with captivating fancies, as lustrous, it may be, as the gold with which the Syrian workmen overlaid King Solomon's ivory throne, or they would not have given such surpassing names to details or parts of structures as they have done. They must have been thinking of more than shaping an oaken beam, for instance, when they called the stanch central-piece of a roof the king-post, and the two smaller pieces that perform a corresponding central service, queen-posts. We are sure they felt that these were the crowning pieces of their framework, to which all the others were attached, for strength's sake, and that they gave them these names because they answered in their minds to the dignity of the service they rendered. We do not wonder that the slater was impressed with the thought, and that when he came to cover their roofs with slates he distinguished one size from another by an elaboration of the same association of idea, and that he called them duchesses, countesses, and ladies, according to their measurement.

Look at the roof of Westminster Hall. Note the bold span of the curved braces that form the mighty arches; note, too, the dignity and interest given by the winged figures, and the lightness of effect produced by the open cusped tracery. We can never cease to admire the graceful and sufficient contrivances to carry weights and resist strains. Six hundred years have sped since the bold fellows who reared it departed to the mercy of God; yet it has not been surpassed in any country in the world.

But the old carpenters did not reserve their skill for the halls of kings' palaces or other high places; for some of the ancient farm barns present equally wonderful specimens of their constructive powers. Modern architects look up with awe into some of their stolid roofs over these humble buildings, raised there 400, perhaps 500, years ago, and yet spanning the wide spaces with undiminished strength and beauty. The great beams stride from side to side of the high walls, stretch forth and jut out to meet others, rise up to support more, slant away towards the dim, shadowy apex, or slope downwards from it, forming an angle here and a curve there, with a labyrinthic effect that bewilders the unschooled eye; yet those who are the most competent to judge aver that there is not an inch of timber used but has its deep purpose and scientific use. Scorners have but to look upon the great, cumbrous, hoary, mellow barn at Harmondsworth, Middlesex, or upon that at East Barsham, or upon another at Easby Abbey, to be convinced of the nobleness of old carpentry.

It is allowed that England has carried the science of carpentry to greater perfection than any other country. Its insular position, and consequent necessity for "wooden walls," caused naval architecture, in all times, to draw to itself the boldest and most original constructive geniuses; and, of course, it was easy to transfer to the land the cunning devices intended for the formation of floating homes. Moreover, stone was always difficult to be procured in some localities; while, on the other hand, the great forest furnished timber in abundance down to Tudor times. The clever carpenters in the days of the Plantagenets sometimes built churches entirely of timber, as we may see at Greensted, in Essex. More frequently, however, they were content to span the walls of stone churches with open timber roofs; or to cap them with wooden turrets, or delicate spirelets covered with cleft oak shingles, or otherwise; or to shade them with timber cloisters; or to fill them with elaborate screens, stalls, pulpits, and pews. They made bridges, too, of timber: notably, the first bridge over the Thames. But far more freely they employed their skill in dwellings.

Half-timbered houses still abound in many of our ancient towns, such as Coventry, Canterbury, Chester, Shrewsbury, and Sandwich; though, as in the metropolis, fires, edicts, and frequent clearings to make way for improvements, have removed immense numbers of them. We are all familiar with the quaint, projecting stages; peaked, and sometimes hipped or slant, capped gables; grotesquely carved corbels; their charming bay windows and oriels; their coquettish dormers, diamond-paned lattices, and sun-baked, weather-beaten hues. We may see that the foundations were generally made of stone or brick. Upon this base were laid large timbers, the full length and depth of the first stage. Into these timbers, called wall-plates, the corner and other principal posts of the first stage of the superstructure were firmly fixed. Where there was a window or door to come, upright and horizontal pieces were placed to frame the opening. And between all these posts and beams were inserted curved braces, which linked the framework together and strengthened it. The joists to form the floor of the next stage overlapped the lower rooms considerably, and so caused the next chamber to project over them. They received the wall-plates, into which the main timbers of the upper chamber were to be tenoned, just as the foundations received those of the stage below. When there was a second or a third story the same process was repeated; and then, over all, rose the steep gables, deeply hooded in the verge-boards with which they were protected. A paper read by Mr. Street to the members of the Institute of British Architects, describes the construction of several examples of ancient roofs and dwellings.

Very proud some of the old carpenters were of their work. On the great window of the hall of Little Moreton Hall, Cheshire, there is this legend: "This windows whire made by William Moreton, in the yeare of our Lorde MDLIX.—Richard Dale, Carpêder, made this window by the grac' of God." Very austere, too, were some of them. On the beams of a roof at Crawley, one cut this admonition:—"Man in Weal beware: Beware before what cometh behind."

A carpenter cut upon a beam in the parlour of the old parsonage-house at Meppershall, which was upon the boundary of two counties, this little joke: "If you wish to go into Hertfordshire, hitch a little nearer the fire." But the usual tenour of their inscriptions is serious and devout.

There are many old writings extant in which mention is made of carpenters and joiners and

their work. The early archives of the City of London give many curious particulars of them. One entry in a venerable tome belonging to the Corporation, dated 1308, sets forth that Simon de Canterbury, carpenter, came before the mayor and aldermen on the Saturday after the feast of St. Martin, in that year, and declared he would undertake to make, for William de Harrigtone, polterer, a hall and a room with a chimney in it, and a larder between the two, and a sun-parlour with an oriel in it over them, and cellars and sewers below them, as well as a stable with a sun-parlour and garret over it, before the feast of Easter next ensuing; and that the said William de Harrigtone undertook to pay for the work aforesaid, the sum of 9*l.* 5s. 4d., half-a-hundred of eastern marten skins, fur for a woman's hood, value five shillings, and fur for a robe for him, the said Simon.

The churchwardens of the parish of St. Michael, Cornhill, as we mentioned in these columns, in our notice of Mr. Waterlow's volume, have a pale vellum volume, rich with clerkly flourishes in faded ink, in which the parochial accounts were kept four hundred years ago. In this there are many entries relating to workmen. One line tells us that a carpenter received fourpence for half a day's work in "mendynge of a pew," in 1460; and others show that he was frequently employed in putting the men's pew, the women's pew, or the mayor's pew, in repair, at a similar rate of pay. Various small sums are put down in the accounts for "trasshe" (trifles) for the joiner. "Payd for an hinge for Russes wyfes pew ixd.," wrote the churchwardens in 1457. The price of labour brought carpenters a shilling a day in Queen Elizabeth's reign. So when we read against the date 1565, in this same volume, "Itm. To Mr. Owghtinge, Carpenter, for mending the pulpitt in the churche yarde iiijs.," we know he was hammering, sawing, screwing, filing, wrenching, and planing, for four long days before he had earned his money.

The account-rolls of the priors of Holy Island, preserved by the Dean and Chapter of Durham, yield many similar references relating to the north. Among southern records we must particularise the expense-book of Prior Moore, preserved in the chapter-house of Worcester Cathedral, of which we gave some account in our notice of Mr. Noakes's work on Worcester Cathedral. This document throws light, too, upon the way in which the trade of a workman gave him a surname. From the evidence to be gathered from it we may be sure, for instance, of the original rank of one of the executors of Dick Whittington's will, John Carpenter, though we know he was a worthy citizen of renown when appointed to the trust. In a word, neither the quaint-cropped verbiage of the old English statutes, nor the tawny pages of Mediæval manuscripts, nor the glitter of jewelled goblets, albeit, in the days of yore, they flashed upon the *dressoirs* of a dozen abbots in succession; nor, indeed, the sight of any relic we can name, affords us the vivid realisation of the old times that we obtain from an examination of ancient carpentry. It behoves us, therefore, to conserve every example of it reverently. We feel, too, as we gaze upon it, that if to execute work of a high rank, stately, great, and bold, is to be noble, then, truly, English carpenters have a noble ancestry. *Noblesse oblige.* Let their successors look to it.

KENSINGTON PALACE AND GARDENS.

So far back as 1631, Sir Henry Finch was proprietor of these grounds, and of the mansion, then called Nottingham House, on the descent of Notting-hill, and thus contra-distinguished, as the Ham or Vale. Sir Henry was recorder of London, an office of much greater importance in those days; and about the year 1690, William III. bought the estate, made sundry additions, and adopted it as a royal palace.

Sir Christopher Wren made several improvements, and built what was then called the south front; but if the east front was erected, as is recorded, in the reign of George I., then the present south and west elevations must certainly have been carried up at a later period.

John Evelyn records in his diary, that he visited King William III., A.D., 1690, at this palace, which was then "a packed and altered villa," so it is clear that a great part of the original foundation, perhaps of 300 years' standing, is embodied in the existing amalgam of courts, corridors, entrances, chambers, and state rooms, both low and lofty.

As we now view it, the grand escalier, auditorium, and state apartments, although once highly ornate, and decked with gilt statuary, are divested of their splendour, unused, and going to decay; the rain absolutely enters, and despoils rich tracery and embellishment. Still portions of the wide palace are occupied, and in order. The Duchess of Inverness, the Prince and Princess Teck, and others, have their allotted portions, but the general aspect is one of waste, if not desolation.

The west front sleeps upon the outer boundary wall line, under its tile roofs and dormers, but external to the quadrangle and in continuation we find four small ancient cottages or villas, as also a large stable, built in ordinary rural style, of the Cromwellian era, in fact, viewing its fine position, the whole is an incongruity, if not an absurdity, unsuited to the age.

Outside the palace, and external to Kensington Gardens, all along the west boundary, from Bayswater-road to Kensington High-street, there is a waste margin exceeding 100 yards in width, which ought to be added to the gardens, and bounded by an iron fence similar to the Park railing; this, together with the site of the antiquated palace, if it were removed, would add 40 acres or more to the extent of Kensington Gardens; and a new palace built upon the highest plateau of the Park, near the Round Pond, need not cover more than ten acres, or at most 15 acres; thus, 30 acres might be gained in Park range, besides the advantage of an extended circuit, and the attainment of a truly Royal palace, worthy of the country, and encircled by forest trees of mature growth.

In the reign of George I., Kent built the cupola, and made other additions, besides laying out the grounds, and as all the noble wide glades concentre at the point of the Round Pond, this would seem *to be the position fixed for the erection of a suitable palace,* commanding views on all sides through stately forest glades; on the east across Hyde Park, and extending a mile and a half to Park-lane, the position being elevated, open, and healthy, as well as easily accessible to the metropolis of fashion, no other site in London, nor indeed of any other European capital, can equal it.

Have we at present any metropolitan palace adapted for the occasions of Royalty? The convenience for drawing-rooms, levées, receptions, but, above all, the healthfulness of position, and adaptation for occasional residence: all these combined are to be found in the open, dry, and elevated site herein described, and alluded to in the *Builder* of the 13th July.

As to style of building, our national palaces, —and they are many,—have little to admire. Windsor Castle is a glorious old relic, but for modern usage has little to recommend it. Hampton Court, although William III., Queen Anne, George I., and George II. frequented it much, is now only used as an asylum for pensioners. St. James's is wholly antiquated, and yet it opens the portals for levées and drawing-rooms, notwithstanding its decrepitude. Buckingham Palace may be commodious, but its low position renders it very uninviting for any continuous abode, and the elevation, although solid and somewhat ornate, is anything but attractive.

The appearance and effect of the new Foreign Offices, viewing also the dignity of the interior, its solidity, convenience, and aptitude for the occasions, would seem to suggest that character of building for a new palace in Kensington Gardens; for here at least all that is commanding in architecture should bear evidence of a truly Royal palace.

The connexion of Hyde Park with Kensington Gardens, both being now free to the public, having intercommunicating walks, surrounded by a continuous fence, and forming one integral liberty, makes it essential to refer again in the *Builder* to the grievous nuisance of Knightsbridge Barracks, which is a foul blot and disgrace to the Ladies' Mile,—the most fashionable and ornate portion of the whole enceinte.

If old Kensington Palace be removed, surely some space might be found in the outer margin for a suitable Guards' barracks—that is, in case Government should not wish to build new quarters in Chelsea (near the Foot Guards), or in case the officers should decline to surrender their messroom, which overlooks the Drive.

It is clear that wherever the Household troops get new barracks, at least six or perhaps eight additional public-houses must be opened; therefore the writer takes the liberty of suggesting to head-quarters that an extensive caserne, with large reception and refreshment rooms, be opened and licensed for the entertainment of the troops and the public, within short distance, but subject to such regulations as may assure free enjoyment with due decorum.

The old barrack, as it stands, is not only a blot upon the Park within, but it degrades and depreciates the value of the choicest spot on the Kensington line of road, while it also restricts the thoroughfare on the principal grand western route from Piccadilly to the royal town of Kensington. If the building were abated and the railing continued, but withdrawn where the barrack impinges full 24 ft. upon the road, the open view would give a seeming expansion to both road and Park; and were the beautiful floral border continued from Albert-gate, then Hyde Park would really become a delightful place of resort worthy of London, and a solace to that portion of its three millions who daily use the promenade.

Kensington, formerly a rural hamlet, is now a most important suburb, if not a royal town; therefore the enlargement of the main road at Knightsbridge has become a necessity, and especially so if hereafter the palace become the abode of royalty. Our Queen Victoria was born there. After William III., Queen Anne resided there principally until her death in 1714; then George I. up to 1727; but George II. and Queen Caroline made this palace their treasured home and solace till 1760. Afterwards, during the reign of George III., Windsor and Claremont were more in use, and Kensington became the "*retiro*" for members of the Royal family or pensioners of the Court. Thus this splendid foundation, now in its decadence, awaits the revival of its bygone magnificence.

QUONDAM.

NEW RAILWAY FROM HUDDERSFIELD TO KEIGHLEY.

A numerous and influential meeting has been held at Halifax, as to a scheme for securing to the town better railway facilities and accommodation. The mayor (Mr. J. D. Hutchinson) presided, and was supported by Lieut.-Colonel Holdsworth, Mr. John Crossley, Mr. E. Crossley, and others. A committee reported that, having carefully examined the plans and considered the scheme submitted by Mr. Fulton, they adopted the following resolution:—

"That after mature consideration this committee recommend to the public meeting that the scheme of a new railway from Huddersfield to Keighley, as laid down by Mr. Fulton, be adopted. The committee are also of opinion that at least 20,000 shares, at 10*l.* each, should be subscribed before the proposed railway should be proceeded with; but it is distinctly understood and stipulated that no promoter shall be liable beyond the deposit of 10s. per share until the Act of Parliament is obtained, and that no future calls exceeding 3*l.* per share shall be made in any one year."

The adoption of the report was carried unanimously, and the committee were requested to continue their services, and to modify the plans as they might think necessary, but not to abandon a central passenger station and a high-level goods station in the town, and also to take every step to secure subscriptions for shares.

THE SEWAGE QUESTION.

Purification of the Thames.—For several years past, as our readers know, the local authorities of Kingston-on-Thames, Hampton Wick, Teddington, East Moulsey, Richmond, Twickenham, Isleworth, Mortlake, and Brentford, have been under imperative orders from the Thames Conservators to divert the sewage of their respective towns from the River Thames. In consequence of the great diversity of opinion amongst scientific men as to the best means of dealing with town sewage—some recommending irrigation, others filtration, and a third class deodorisation—as well as owing to the difficulty of obtaining land for the utilisation of the sewage, no definite action has hitherto been taken, although the authorities of Kingston and Richmond have spent several hundreds of pounds in vainly endeavouring to procure eligible sites for irrigation fields. The Conservators, it appears, have decided to wait no longer for preliminary investigations and experiments, for the Twickenham Local Board have just been informed that unless they take immediate steps for the diversion of the town sewage from the river, the Conservators will proceed against them for penalties. The penalty for non-compliance with the order of the Conservators is 100*l.* per day.

The Birmingham Sewage Injunction.—Vice-Chancellor Bacon has given his decision respect-

ing an information filed at the instance of certain inhabitants of Gravelly-hill, near Birmingham, to restrain the town council of that borough from committing a nuisance by carrying on a sewage-farm at Saltney. An injunction had already been granted, and a motion was now made for an order of sequestration against the council for disobedience of the injunction. The Vice-Chancellor said he could not but feel the great difficulty the corporation were in, in dealing with the enormous mass of sewage they were bound to get rid of; but it appeared, from their own evidence, that they were able, with their present powers, to do much to abate the nuisance; in fact, their very application for more time showed that they thought that to be the case. Little, however, had been done, even since the Bill was thrown out of Parliament. He found himself, therefore, bound to allow the writs to be issued; but, as a matter of indulgence, he would direct that they should not be issued till after the second motion day in Michaelmas Term next.

Visit to the Merthyr Sewage Farm.—Several of the members of the Council of the Royal Agricultural Society have visited the Merthyr Sewage Farm. The sewage lands belonging to the Local Board of Health are said to be one of the most successful speculations undertaken in the country for the utilisation of sewage. The Board was driven to find out some means for the disposal of the town sewage, the population being 50,000. There were constant fights with other local authorities for polluting the already polluted river Taff. Ultimately the Board was placed in Chancery, and the town was then put under the professional care of Mr. Bailey Denton, who, after due consideration, recommended that the new remedy suggested by Dr. E. Frankland should be tried at Merthyr. This new remedy, it is said, has been successful. The cost has been great, but the cure is said to be perfect. From the day when the filtering was first used in February of last year to the present time the sewage of Merthyr has been cleansed by the twenty acres laid out for filtration at Froedyrhiw. This acreage was divided into four plots. Upon each of these plots a fourth part of each day's sewage has been distributed evenly, after being strained. The whole of the land thus divided has been drained nearly 7 ft. deep, and in such a way that no sewage can descend directly to the drains from the surface. Mr. Denton obtained, on the 10th of March last year, authority from the Local Board to prepare the surface of the filtering acres for the growth of crops, and to plant such vegetables as he considered were suitable under the circumstances. Accordingly, on the 14th of June following, the land being ridged up for the purpose, the planting of cabbages and sowing of mangolds commenced. On the 30th of August, seventy-seven days after the commencement of planting, part of the crop was offered for sale by auction, and realised 17*l.* 15s. an acre, while some portions withdrawn from the sale realised afterwards 20*l.* an acre. During this period of seventy-seven days, the sewage of the district was poured on to the filtering areas, thus affording conclusive proof of the capability of producing vegetables during the filtration of the maximum amount of sewage through the soil upon which they grew. Since the crops thus raised and sold have been cleared from the grounds, fresh ones have taken their place, and were inspected. Some portions of this year's crops have been already sold at 22*l.* 13s. 4d., 27*l.*, and 32*l.* 13s. 4d. an acre respectively, yielding an average of 27*l.* 9s. an acre.

ARCHÆOLOGICAL EXCURSIONS.

The Kent Archæological Society.—The annual meeting and excursion of this society took place at Faversham and its vicinity. The meeting was held in the large room of the Faversham Institute, under the presidency of Earl Amherst. The Rev. W. A. Scott Robertson read the report, which thus opened:—

"In this their fourteenth annual report, the council can give, as always, a satisfactory account of the progress of the society. Our members steadily increase, and are growing beyond the number of 1,000, about which we have hovered for some years. Forty new members have been elected in the year. Many more are awaiting election at your hands to-day. The balance at our bankers is 512*l.* 16s. 9d.; but the greater half of this will be payable in a few days to our printers, engravers, &c., for the expenses of the eighth volume of 'Archæologia Cantiana.'"

The report was unanimously adopted. Mr. Beresford Hope, M.P., had given notice of a motion to alter the rule for the time of the general meeting, which at present must be held in July, August, or September, by providing that it may also be held in October. Mr. Hope, however, was not present, and Earl Amherst called attention to the notice, and expressed a doubt whether it would be judicious to make the alteration. Ultimately Lord Fitzwalter said they would all agree with him that any proposition coming from Mr. Beresford Hope should meet with every attention; but as they could not, by reason of his absence, hear that gentleman's reasons for the proposal, he would move that they proceed with the orders of the day. The motion was agreed to. The ladies and gentlemen present then went to inspect the parish church. The Rev. C. E. Donne, the vicar, described the church. The Elizabethan Grammar-school was next visited, by permission of Mr. Crosswaithe, the head master, and the site of the ruins of Faversham Abbey proved to be interesting, the few remains being pointed out by Mr. Bedo. Davington, a small village about a mile from Faversham, then became the centre of attraction. On leaving Davington, the company returned to the town, where dinner was served at the Institute, Lord Harris presiding, supported by Earl Amherst, Lord Fitzwalter, Sir Walter Stirling, &c., there being a considerable number of ladies present. At the evening meeting, which was held in the reading-room of the Institute, Mr. F. F. Giraud, town-clerk of Faversham, read a paper on the Ancient Charters of the Corporation. The Rev. C. E. Donne then read a paper on "The Tragic Story of Arden, of Faversham." Mr. Bedo read a paper on "Roman Remains discovered in Faversham," and this brought the evening meeting to an end. A local museum which was formed here, consisting of objects of antiquarian interest, contributed by members and friends of the society, and a collection of the ancient documents as well as the insignia of the town of Faversham, excited considerable attention during this and the morning of the following day. On Wednesday, an excursion took place, under the guidance of the Rev. W. A. Scott Robertson, to various places of interest in the neighbourhood of Faversham. Preston Church, which is in close proximity to the Faversham railway station, was first visited. From Preston Church the party, which numbered in all about 100 ladies and gentlemen, proceeded in carriages to Ospringe, where the remains of the Maison Dieu (which has almost entirely disappeared) and of a sort of hospital for lepers, of the date of the fourteenth century, were inspected. Thence the company passed on to Syndale Park, the seat of Mr. W. Hall, and supposed to have been the site of a Roman camp (probably the Durolevum of Antoninus). The house as well as the grounds was thrown open to the company, and Mr. Hall entertained the numerous party to a cold collation. At Syndale Park, a paper on the Roman camp, prepared, we believe, by Mr. T. G. Godfrey-Faussett, was read by the Rev. Scott Robertson. The company afterwards made progress to the ruined church of Stone, which is specially noticeable from the fact that it was of the Roman Britannic period, and is almost the only place of the kind in England where any part of the building is held to be undoubtedly of Roman origin. Eastling Church was visited, and from Eastling the party proceeded to Ospringe Church, which was shown to them by the vicar, the Rev. W. N. Griffin. From Eastling the party returned to Faversham, after a pleasant day's excursion, with fine weather, beautiful scenery, and objects of antiquarian interest to recommend it.

The Norfolk and Norwich Archæological Society. The annual summer excursion of this Society has been held. The unfavourable character of the weather on the previous day, combined with other causes, rendered the attendance of members but small: still the day was an enjoyable one. The first place visited was Wroxham Church, and here the members were welcomed by Mr. R. Blake-Humfrey and his wife, and by the vicar. The parish church of Horning was next visited, and then that of Potter Heigham. At Ludham Church a brief paper, sent by Mr. Gunn, was read by Mr. Fitch, the secretary. On their way from Ludham to the ruins of the Abbey of St. Bennet's at the Holm, the members visited Ludham Hall, the site of the Grange of the Abbey, and subsequently of the summer residence of the Bishop of Norwich. Dr. Bensly read on the spot a report of the fire, made by the Rev. A. Harrison, rector of Catfield. The members next proceeded down the marshes to the ruins of the Abbey Gate-house. A paper was here read by the Rev. C. R. Manning, from Taylor's "Index Monasticus," which summarised all that is known about the rise and fall of the abbey. After the reading of the paper the site of the Abbey Church was pointed out by Mr. Powell. The visit of the Association to the abbey was one of the most pleasant features in the day's excursion, and ended the summer gathering, the members dispersing immediately on leaving the marshes.

The Essex Archæological Society.—The annual meeting of this Society, took place at Maldon, from whence excursions were made to various places of historic interest in the neighbourhood. The programme, as has been the case for the last few years, was much too full for the few hours allotted to it. The proceedings were initiated by a general meeting in the large room of the Public Hall, which had been turned into a museum of antiquities. The audience consisted of about 100 persons, including thirty or forty ladies. The Bishop of Rochester, who was accompanied by the Hon. Mrs. Claughton, presided. Mr. King presented the twentieth annual report of the Society, from which it appeared that there was a balance of 120*l.* at the bank, of which about 80*l.* were an "available working balance." The number of members was 173, showing, unfortunately, a loss of seventeen since the last revision of the list. The museum at Colchester has been greatly increased during the year by valuable gifts of coins, medals, and various objects of antiquity. In 1870 the number of visitors was 10,155; in 1871 it was 13,969, and during the past year it was 14,780. The meeting listened with interest to a speech from the Rev. E. R. Horwood, descriptive of the old church of All Saints, Maldon, and of the ancient history of the town itself. Mr. Nichols explained the stained glass. The bishop, in closing the meeting, deplored the fact that this interesting and useful society had only 173 members. In Kent an archæological society had 1,000 members; in Sussex there were as many; and even the Surrey Society, which was quite a young one, had more members than this. The history of the most ancient inhabitants of our land was very much bound up with Essex, and it was a pity that the spirit of archæology should not be much more dominant in the county. The party then partook of luncheon, served at the Blue Boar Hotel. Afterwards, the churches in the town, Dr. Plume's Library, Beeleigh Abbey, the site of Woodham Walter Hall, Danbury, Little Baddow, and the priory church of Hatfield Peverel were visited, a paper on the last being read by the Rev. T. Debary. Next year's meeting is to be at Dedham.

Sheffield Architectural and Archæological Society.—The members of this society, to the number of about five-and-twenty, recently made an excursion to Hardwick and Bolsover, under the generalship of Mr. J. D. Webster, one of the honorary secretaries. At Hardwick Hall, the Rev. J. Stacye, president of the society, read a paper on the history of Hardwick, and the career of the famous builder of the Hall, Elizabeth, Countess of Shrewsbury. On the way to Bolsover, a short digression was made to see the curious old Norman church at Ault Hucknall. At Bolsover, the church was first visited, and then the castle. At the latter place, the party were received by Lady Frances Beauclerk. On reaching Chesterfield, tea was provided at the Angel, and the party then returned to Sheffield. The day was very fine, and the arrangements were satisfactory.

A WORKMEN'S CITY.

This was the term used by Lord Shaftesbury, on Saturday last, after laying the first stone on an estate at Wandsworth, called the Shaftesbury Park Estate, which has been acquired by the Artizans', Labourers', and General Dwellings Company (Limited), and is to comprise 1,200 dwellings. The company was formed in 1867, in consequence of the destruction of houses by railroads, and other improvements, for the purpose of enabling working men to erect dwellings combining fitness and economy with the latest sanitary improvements, and to become themselves the owners of these dwellings in the course of a stated number of years, by the payment of a small additional rent. On every estate purchased by the company a suitable space will be reserved as a recreation-ground, a co-operative store will be built for the especial benefit of the tenants, and public-houses will be absolutely forbidden.

"We have founded this day," said his lordship, "a workmen's city, and we have founded it upon the very best principles. We have founded it upon the great

principle of self-help, and upon the great principle of independence. By independence, I mean without any other assistance than that which every man has a right to receive from his fellow-man,—sympathy and kind aid,—and that is what every man, either great or small, stands in need of from another. You have founded the workmen's city upon your own efforts, and by your own contributions, and for the great and wise purpose of advancing your social position and bodily health, as well as your intellect and general prosperity. And most heartily do I say for myself,—and I also say it in the names of hundreds and thousands of your fellow-men,—that the blessing of Almighty God will rest upon the good work which you have inaugurated to-day. I like the principles you have laid down for your guidance. You have shown your wisdom, in a moral point of view, by excluding the public-house and the tap-room; and you have done with them as the people did of old by the lepers, you have put them outside the camp."

We are not quite certain that we desire to see workmen's cities established. We have no desire to segregate classes; but we shall doubtless have an opportunity before long to know more of the plan proposed. Lord Shaftesbury gave, as he always does, some excellent advice, and has doubtless satisfied himself of the wisdom of the scheme proposed to be carried out.

THE RAILWAY ARCHES QUESTION.

The St. Saviour's Board of Works have followed the example of Lambeth, and determined to take proceedings against the Chatham and Dover Railway Company to compel them to remedy the nuisance caused by the percolation of water through their railway arches. The company are also to be further proceeded against with reference to the noise and alarm caused by the trains passing over the bridges, which has now become an intolerable nuisance, and a source of positive danger to invalids. It is contended that the loud noise could be materially abated, if not almost completely stopped, by the face of the girders being covered over and enclosed, instead of being exposed as at present, the rails being laid upon the top of the girders with only a thin sheet of iron between them. The bridge at Ludgate-hill, which is already encased and covered in, is pointed to as a proof that the nuisance complained of with respect to the several bridges in Lambeth and other railway bridges south of the Thames could be easily got rid of.

LONDON SCHOOL BOARD.

At a recent meeting of the Board, Mr. C. Reed, M.P., moved, in accordance with a previous recommendation of the Works Committee:—

"1. That Mr. E. R. Robson be, and he is hereby, appointed architect of the Board, at a salary of 1,000*l.* per annum, with a view, amongst his other duties, to his designing and building the schools of the Board; that Mr. Robson give his time to the Board; and that the Board provide the necessary staff and offices.

2. That it be referred back to the Works Committee to make arrangements by which Mr. Robson may be relieved of the duty of looking out for sites and negotiating for their acquisition."

He said, in consequence of the increased labour thrown upon the committee in reference to the acquisition of sites and arrangements for buildings, it had been found necessary to make a re-arrangement of the architect's department. At the present time, the Board had acquired fifty-four sites, and had appointed thirty-one architects to build schools, including seven who would be proposed at this meeting. In response to the appeal for competitive designs, about 180 architects had sent in their designs, with regard to the schools where the competition had been limited to six architects for each school; and in regard to one open competition, fourteen architects had sent in designs. Practically, therefore, the Board had arranged for buildings on thirty-two sites. As the Board proceeded with this work, they found a difficulty in getting superior architects to compete; the Board had not offered any fee for the preparation of the designs, but had given to the successful competitor the execution of the work. Under the circumstances the committee felt there might be a difficulty in future in getting a sufficient supply of competitive designs. Within the next eight months fifty or sixty more schools would have to be arranged for; and the question arose as to the best way of dealing with this moiety of the work to be fulfilled within the term of the present Board's existence.

Mr. Freeman said when the Board commenced their operations they gave an opportunity to the architects of London to compete and bring out anything good in the way of schools, but that had practically worked itself out, and it would be a serious thing to go on paying a commission of 5 per cent. for all schools, so that the payment of 1,000*l.* a year to their own architect would really be a considerable saving to the ratepayers. Mr. Robson had given abundant evidence that he was thoroughly qualified for designing and building schools for the future.

The resolution was then agreed to.

The following were appointed architects for carrying out the schools to be erected on the undermentioned sites respectively:—(i.) Eelbrook-common, Chelsea, Mr. Basil Champneys. (ii.) York-road, Islington, Mr. F. W. Aldwinckle. (iii.) Cottenham-road, Finsbury, Mr. Lacy W. Ridge. (iv.) Wilmot-street, Bethnal-green, Messrs. J. Giles & Gough. (v.) Harper-street, New Kent-road, Mr. Robert W. Edis. (vi.) West Ferry-road, Millwall, Mr. R. Phéné Spiers. (vii.) South-road, Brockley-road, Mr. H. Saxon Snell.

Since then the following appointments have been made:—New Winchester-street, Finsbury, Mr. Charles Barry; Blundell-street, Islington, Mr. T. Roger Smith; Woodpecker-road, Newcross, Mr. Frederick Warren; Turin-street, Bethnal-green, Messrs. Bodley & Garner.

SCHOOL BOARDS.

Leeds.—A report recommending, among other measures, the acceptance of tenders for building three new schools, amounting in all to nearly 20,000*l.*, has been adopted, after some discussion, by this Board. The foundation-stone of the first school building to be erected by the Leeds School Board has been laid in Bewerley-street, Dewsbury-road, by Sir Andrew Fairbairn, the chairman.

Walsall.—The following tenders were presented for the erection of the Tantarra-street School:—Mr. D. Moore, Walsall, 3,005*l.*; Mr. J. Rowley, Walsall, 3,168*l.*; Messrs. Rowley, jun., & Lynex, Walsall, 3,210*l.*; Mr. G. Hevengham, Wolverhampton, 3,387*l.* 4s. For the erection of the Bloxwich School:—Mr. D. Moore, 2,923*l.*; Mr. J. Rowley, 2,997*l.*; Messrs. Rowley, jun., & Lynex, 3,280*l.*; Mr. G. Hevengham, 3,164*l.* 12s. The offer of Mr. Moore for the erection of the Tantarra-street school was accepted, and that of Mr. James Rowley for the erection of the Bloxwich School. The architect's estimate, it was stated, was in each instance 3,000*l.* It was stipulated that the first-named school should be completed within eight months from the 1st of August, and the other within eight months of the contractor receiving notice to begin the work. Payment of the undermentioned sums was ordered:—560*l.* to Mr. D. Moore on account of his contract for the erection of the Wisemore School; 610*l.* 3s. to Mr. T. Highway for the Wisemore site; 351*l.* 12s. 6d. to the Rev. J. Barrow for the Bloxwich site; and 150*l.* to Mr. S. Russell, for his interest in the Paddock site. The clerk produced a statement showing that, inclusive of these contracts, the Board had become liable for an aggregate sum of 10,700*l.*

Southampton.—The clerk read a communication from the Education Department, returning the plans for the erection of Board schools in Bevois-town, which they deemed satisfactory, and intimated that before tenders for the building were accepted an accompanying form should be filled in and sent up, in order that the Board might consider what amount of grant they could recommend towards the school. It was resolved that the form be referred to the general purposes committee, and that tenders be advertised for.

Worcester.—On the question of the appointment of a clerk of works, Mr. Scott doubted the wisdom of going to the expense of appointing such an officer, knowing the integrity of the builders, and considering the fact that the architect resides near the works. Mr. T. R. Hill did not agree with Mr. Scott's views. No one could have greater faith in Messrs. Wood than he had, but where over 100 workmen were employed it was necessary some responsible person should be employed to see that the character of the material used and the quality of the work done were satisfactory. He mentioned that, in point of economy, this might be done without going to great expense in the election of an officer. Mr. Rowe, the architect of the prison buildings, had arranged for the supervision of the works by one of his clerks at a weekly payment of 1*l.* Mr. Day, the architect, who attended the meeting, stated that he could arrange for a similar supervision; and Mr. T. R. Hill moved—

"That Mr. Day having said that such supervision of the works as would be requisite, in addition to his own, to enable him efficiently to protect the interests of the Board, would be obtained by the employment of one of his clerks, at a salary of 1*l.* per week, without the employment of a clerk of works, resolved that the emplorment of Mr. Day's clerk on the terms named be sanctioned."

The Rev. Canon Wood seconded this resolution, which was carried unanimously.——The seal of the Board was affixed to the contract of Messrs. Wood for the building of the new schools.——The Board decided that the principal stone of the new school-buildings should be laid, with due ceremonial, on the 19th inst.

Halifax.—The clerk read the report of the Sites and Building Committee respecting the erection of the schools belonging to the Board and containing specifications as to their construction. The report was adopted, and it was resolved that the competition for designs should rest with the architects within the limits of the borough.

THE ARTIFICIAL DESICCATION OF WOOD FOR FUEL AND ENGINEERING PURPOSES.

The methods hitherto employed to preserve the soundness of timber may be classed under one or another of the following heads:—

1. Applications to the surface of the wood, to prevent contact with the air.
2. Open-air immersion in some antiseptic liquid.
3. A process of suction or filtration, of which Boucherie's method is a type.
4. Injection with an antiseptic fluid with the aid of successive processes of exhaustion and atmospheric pressure.
5. Artificial desiccation in closed vessels, as a preliminary to some one of the above processes.

Several of the above-mentioned processes have formed the subject of valuable memoirs from the pen of the late M. Payen, in various scientific journals. In the paper now before us his observations are designed chiefly "to illustrate the advantages of stove-action, both in the simple desiccation of wood and in preparing it for the aforesaid treatment."* Some preliminary remarks are made upon the advantages attendant on the uses of thoroughly-dried fuel in metallurgical operations and other industrial processes:—

"The presence of air and moisture in the pores of wood is one of the most active promoters of fermentative action in the organic tissues, and of the consequent changes which involve the ultimate destruction of the wood. These changes frequently carry off a notable proportion of heat-producing substances; in like manner, the water contained in the wood, in the process of evaporation, absorbs and carries off a portion of the heat generated by the combustion of the surrounding ligneous matter, the heating power of which is reduced accordingly. To obtain a clear idea of the advantages secured by *drying* wood intended for use as fuel, we must compare the volume of heat generated by the combustion of a given weight of dry wood with that obtained from an equal weight of the same wood when wet or full of sap. The comparison may readily be made by taking the ordinary chemical composition of oak wood as a standard, and comparing the equivalent amounts of carbon which it represents in each state. Now, 100 parts of dry oak wood contain 50 parts of carbon, 6·20 hydrogen, and 43·80 oxygen. The heating power represented by the carbon must be augmented by the equivalent of the excess of hydrogen over and above that required to convert the oxygen present into water. In oak, this excess of hydrogen is about 0·630, which would be equivalent in heating power to 1·89 of carbon. The heating power of 100 parts of dry oak is therefore equal to 50 + 1·89, or, 51·89 parts of carbon, *i.e.* of pure charcoal. But to determine the amount of useful heat, we must reduce the above amount by the volume of heat absorbed by the hydrogen and oxygen which pass off in combination in the form of water. The water thus formed amounts to nearly 50 per cent. of the component elements of the wood, and the heat absorbed by it in the process of evaporation, at the temperature of combustion, is equivalent to five parts of carbon. Consequently, the amount of *useful* heat generated by the combustion of 100 parts by weight of dry oak wood is equal to 50 + 1·89 − 5 = 46·87, or very nearly that of 47 like parts of pure charcoal.

We can easily compare the useful heat obtainable from 100 parts of wet wood, by assuming

* From the French of the late M. Payen, Member of the Institute, — "Annales du Conservatoire des Arts et Métiers," vol. ix. 1871.

that oak-wood in this state will hold 45 per cent. of water; 100 parts by weight will thus consist of ·45 of water and ·55 of dry substances. As 100 parts of dry oak-wood are equivalent to 46·89 of carbon, 55 such parts will equal 25·79 of carbon. From this must be deducted the heat absorbed in the evaporation of the 45 parts of water, which will equal 4·50 parts of carbon. The useful heat obtainable from 100 parts of wet oak will therefore equal 25·79—4·50, or 21·29 parts of pure charcoal only. In other words, to generate a volume of heat equal to that supplied by 100 parts by weight of dry oak-wood, we require 225 parts of the same wood when it contains the proportion of moisture we have supposed above.

In addition to the loss thus occasioned directly, which in itself is serious enough, there are certain operations — such as glass-founding, the fusing and volatilisation of zinc, and the like— in which it would be impossible to secure the desired results with damp fuel; the heat developed would only balance the loss caused by draughts and radiation. Thus, it will be seen that the desiccation of fuel—always of essential service—is, in certain metallurgical processes, absolutely a *necessity*. The preliminary drying can be most advantageously performed when it is possible to effect it with the waste heat carried away by the gaseous products of combustion. In cases where the wood is to be injected under atmospheric pressure, the previous elimination of the moisture contained by it will be useful in many ways, and is, indeed, essential to the penetration of heavy antiseptic preparations, such as *creosote*, sulphate of copper, and the like.

Two methods are available for this purpose :—

1. Natural desiccation, by exposing the wood for a lengthened period to the air, sheltering it, of course, from rain.

2. Artificial desiccation, in stoves of various descriptions."

Again, it is obvious that the impregnation of the wood with antiseptic fluids, in closed vessels, can only be effectually performed when the wood is in a sufficiently dry state to admit of the exhaustion of the air from its pores, and the entrance therein of the injection. If damp, or newly-cut wood be subjected to the injecting process, the fluids contained in the tissues being confined on all sides, and virtually incompressible, cannot give place to the antiseptic liquid whatever may be the pressure exerted. Practically, therefore, injection in closed vessels is only feasible when the wood is sufficiently dry to admit of the exhaustion of the air or gases contained in its tissue and their replacement by the antiseptic fluid supplied by the pumps. This fact was recognised long ago. Hence the great number and variety of apparatus designed for the purpose. But in spite of the advantages which might fairly be expected to result from their employment, the latter have been very long in coming into general use; a fact which may, no doubt, be explained by their high price and imperfect construction, and the tediousness and costliness of the processes. It is only within the last few years past that the artificial desiccation of wood before its impregnation with an antiseptic preparation in closed vessels has been generally adopted in practice. Previously, it was customary to leave the wood—railway sleepers more especially—exposed to the air for a period of eight to twelve months, according to the season. This was very objectionable, not only on account of the loss of interest on the capital represented by the wood during this tedious process, but also by reason of the injury caused to the wood by atmospheric influences, the necessity for large and costly timber yards, and the concomitant expenditure in labour and transport, which were often ruinously great.

The first essays in the art of drying wood artificially carry us back to a period now tolerably remote. Wollaston and Fourcroy both recommended the drying of wood in ovens. Newmann, a German chemist, suggested another method, which has since been adopted in a somewhat different form, *i.e., steaming* the wood. Newmann placed the wood to be dried in a large wooden chest, taking care to leave spaces between the pieces, and then turned on the steam from a boiler provided for the purpose. The condensed steam, charged with albuminous matter taken up from the wood, or rather from its surface, was run off from time to time, and the progress of the operation was judged by the colour of the water. When the latter was clear and colourless, the chest was opened, and the wood withdrawn for use, without further preparation. The process would have been useful enough if *superheated* steam, which would have dried the wood by absorbing the moisture, could have been used, but the cost of the process would doubtless have been too high to permit of its practical application.

In 1837, M. de Mecquenem devised a method of desiccation in which the pieces of wood to be dried were placed in a closed chamber, and subjected to a current of hot air, heated for the purpose by a special apparatus, and driven by a blower. The air entered by apertures in the lower part of the chambers, and escaped at the top, laden with the moisture absorbed from the wood.

In 1839, M. Charpentier obtained a *brévet d'invention* for a process of drying wood in hermetically-closed chambers. The wood was subjected to the action of air heated by contact with metal plates covering the flue of a coke furnace. This air entered by conduits on the level of the floor of the chamber, and escaped at the top, through apertures leading into the chimney of the furnace. Between 1848 and 1853, Bethell, who had paid much attention to the subject, obtained several patents, both in England and France, for stoves for drying wood. In his English patent of 1848, and the subsequent French one of 1853, we find a description of a peculiar kind of stove on the following plan :—

It consisted of a rectangular chamber formed of three walls, and vaulted over; the whole in brickwork, with a certain thickness of slag in the centre, to prevent loss of heat. One extremity of the chamber was open to admit of the introduction of the wood by means of a truck running upon longitudinal iron rails. The opening was closed with a double door when the chamber was full. On the exterior of the opposite end of the chamber was a furnace to burn coal, coke, wood, or tar, according as it was desired to *dry* the wood simply, or, in the words of the inventor, to *smoke* it, *i.e.*, to impregnate it with the antiseptic gaseous matters evolved in the imperfect combustion of certain tarry substances. The heated air or smoke entered through a flue running along the floor and branching at the end; and it escaped, or was pumped out at the top of the vaults. Bethell considered that the interior of the chamber should be kept at a temperature of 110 Fahr., and that the duration of the process should be regulated by the condition of the wood. His experiments showed that this time varied from eight to twelve hours,—the rapidity being attained at the cost of a relatively large expenditure of fuel. In point of fact, the draught was too great to permit of the utilisation of the full amount of heat contained in the gaseous matter, which escaped at a temperature very little below that at which it entered. The heat produced by the fuel was badly utilised, and it is open to question whether, under any circumstances, large pieces of wood, such as sleepers, could be dried in so short a time as eight or twelve hours. The drying could only be effected by the use of a very high degree of temperature, tending to split the wood and weaken its strength. This view was confirmed by the results obtained in a long series of experiments made in 1852-3 by an English manufacturing company, known as the Desiccating Company. A low temperature, and long continuance of the drying process, appear to be the conditions essential to the success of artificial desiccation, particularly with wood intended for cabinet-making, turning, joinery, ornamental work, &c., in which it is desirable, as far as possible, to prevent splitting, warping, and other changes of structure in the material. These results, it would seem, were not secured, by the arrangements above described.

THE HORTON INFIRMARY, BANBURY.

Every week tells of the devotion of large sums of money by individuals for public purposes. The result of a recent instance we illustrate in our present number. The Horton Infirmary, which abuts on the Oxford turnpike-road, about a mile out of Banbury, and was formally opened a few weeks ago by the Bishop of Oxford, was commenced in June, 1869, by the late Miss Horton, of the Holt, Middleton-Cheney, and of Highbury, London, and was intended by her to be a gift to the town of Banbury. Her death, shortly after, caused a stoppage of the works for some months; they were, however, resumed in May, 1870, by her great-nephew, Mr. J. H. Horton, who, being desirous of carrying out her wishes to the fullest extent, has spared no expense to make the building as complete as possible for the purposes for which it is intended.

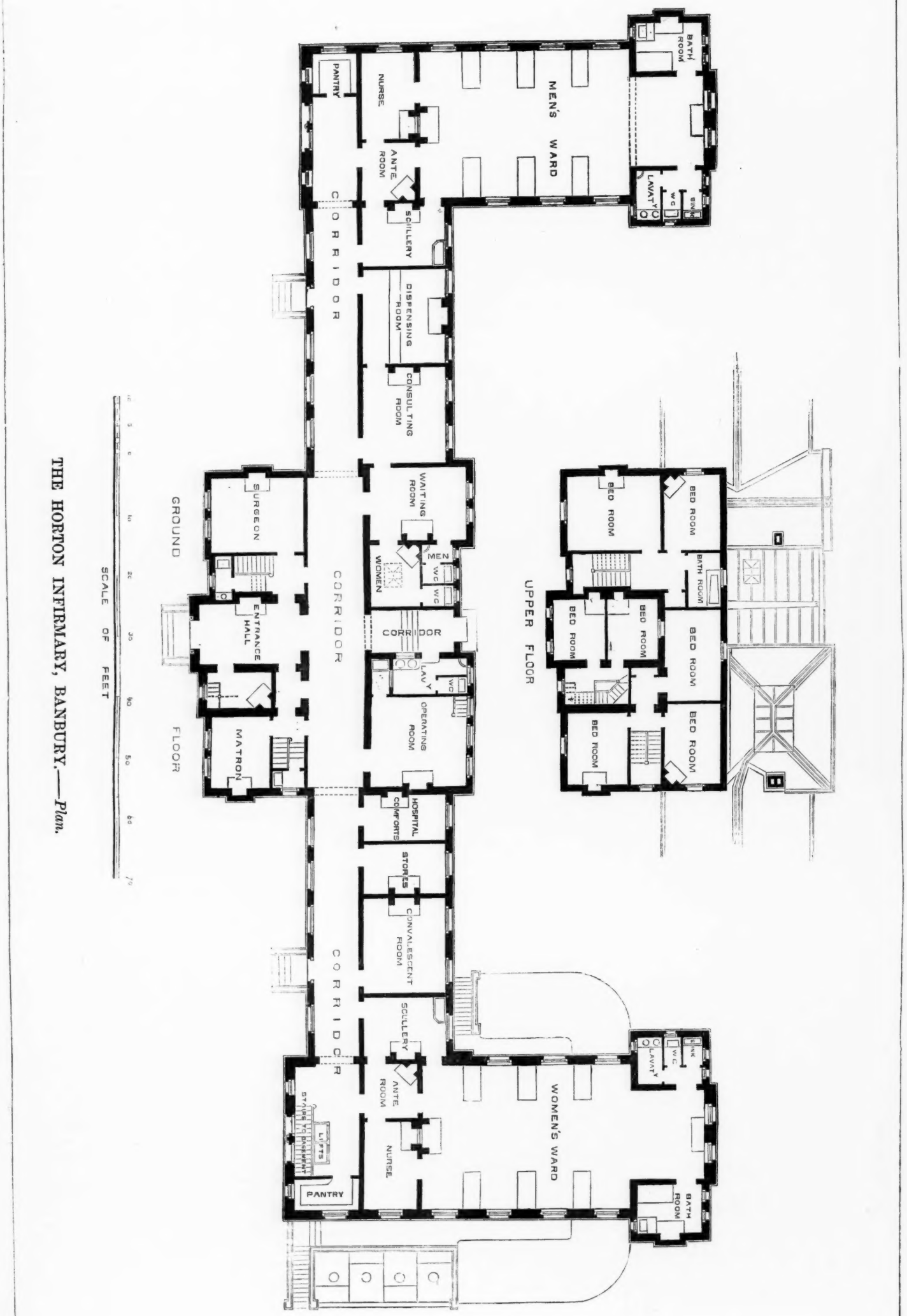
The infirmary stands in its own grounds, and is constructed in red brick with black bands and Box-ground stone dressings. The centre block contains the executive portion of the establishment, and the two wings the wards for patients. In the executive portion there is, on the ground-floor, an entrance-hall, 10 ft. by 16 ft., paved with encaustic tiles, leading into a corridor about 180 ft. long, varying in width from 9 ft. to 7 ft., by which access is obtained to all parts of the building. This corridor affords means of exercise to patients in wet or severe weather. On the right and left of the entrance-hall, and connected with it and the corridor, are the surgeon's, matron's, and porters' rooms; opening from the corridor is the operating-room, 20 ft. by 16 ft., with an open-timber roof, which is lighted by four large windows and a lantern-light. A gallery is provided for the students' use, under which are lavatories and sinks, with hot and cold water laid on, as also to the sinks for the use of the operating-room. There are waiting-rooms for men and women, and dispensing and consulting rooms; a room for convalescents, 16 ft. 6 in. by 14 ft., and rooms for hospital stores and comforts. The wings contain the wards for male and female patients respectively; they are each 48 ft. long by 24 ft. wide and 16 ft. high, with fire-places at each end, and lighted on both sides and at end. At one end of the wards, and having a direct ventilation from the external air, are lavatories, sinks, and bath-rooms, with an ample supply of hot and cold water laid on; and at the other end are ante-rooms, sculleries (with sinks), and nurses' rooms. The wards and rooms appertaining to them are plastered throughout with polished Parian cement; the dressings to doors and windows are executed in cement; and the floors are wainscot, waxed over. The wards and rooms adjoining are ventilated by means of openings in the ceilings, air-flues, &c. With the exception of the kitchen and the bedrooms for the surgeon and matron, the whole of this hospital is on the ground-floor, and the plan has been so arranged that the building can be readily added to should it be found necessary to extend the accommodation of the present building.

Taking advantage of the natural slope of the ground, a large kitchen is obtained under the women's ward, with scullery, pantries, wine, beer, and coal cellars, with a lift to the ground-floor.

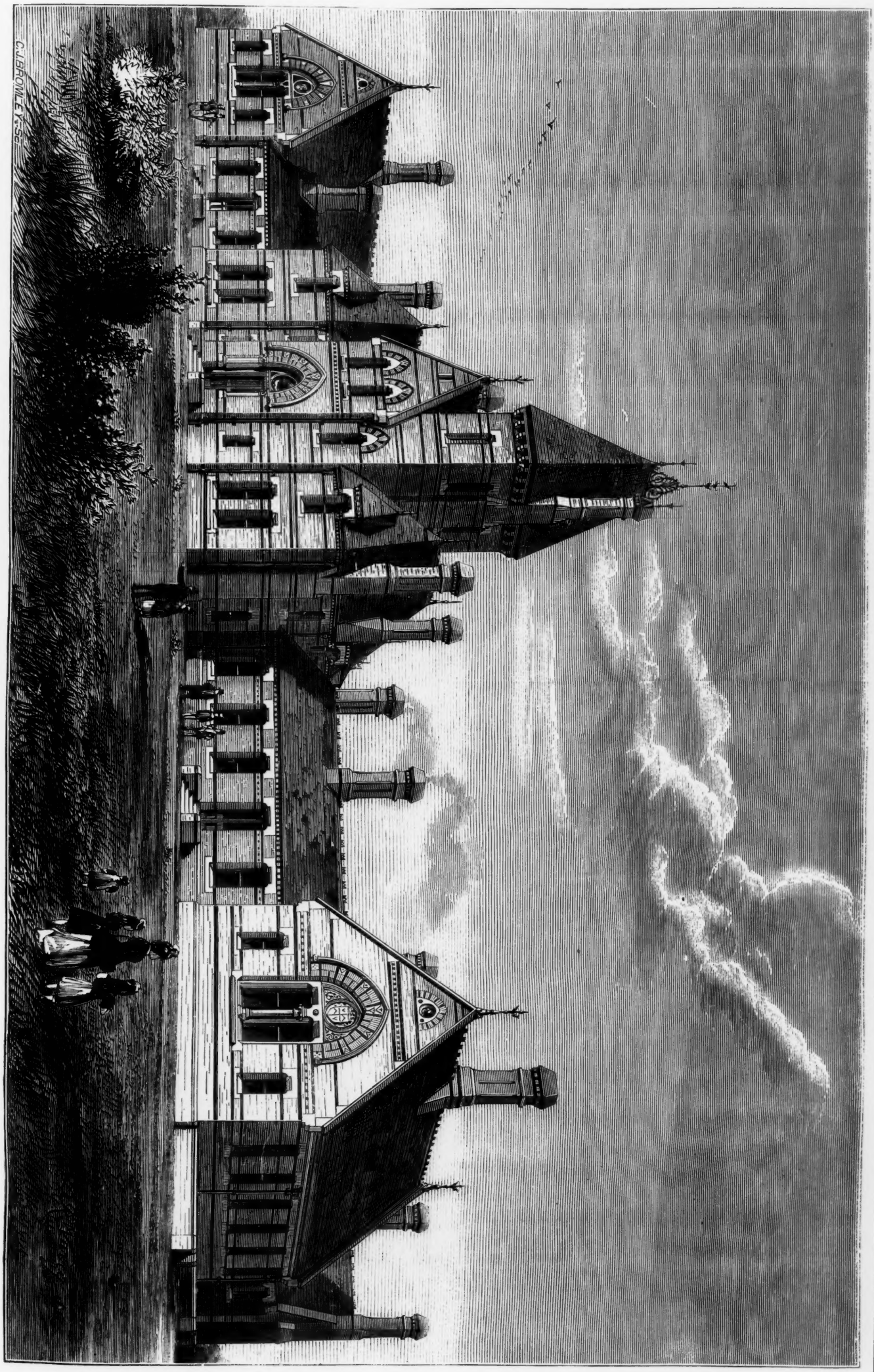
In the upper part of the centre block are bedrooms for the surgeon, matron, porter, and servants. In the tympanum over the windows of the wards are carved the arms of the Horton family, and the monograms of the late Miss Horton and Mr. J. H. Horton combined. The grounds have been laid out as a garden for the use of the patients by Mr. P. J. Perry. A handsome railing and gates form the boundary of the hospital ground towards the end.

The whole of the works under the contracts have been carried out by the builders, Messrs. Franklin & Son, of Deddington, from the designs and under the personal superintendence of the architect, Mr. Charles H. Driver, of London.

Together Mr. Horton and the late Miss Horton have given 10,000*l.*, including the value of the site, for the building and endowment of this institution. The erection of the infirmary cost 6,200*l.*, and the furniture about 900*l.*, and Mr. Horton has given 831*l.* 14*s.* 7*d.* towards its endowment, being the balance of the sum set apart by the donors for the purposes of the hospital. The total amount of donations towards its maintenance is now 3,500*l.* Mr. Hitchcock, of Leamington, has given 500*l.*, besides a promised subscription of 100*l.* a year. That donation was promised upon condition that 1,000*l.* were contributed by others towards the endowment fund, and it is gratifying to be able to state that that sum was not long in forthcoming. A portion of the land which was given for the site of the infirmary, and which is not at present required, is let at an annual rent of between 30*l.* and 40*l.* a year. This sum will go towards defraying the cost of the maintenance of the institution, which it is estimated will be about 600*l.* a year. The infirmary is intended for the use of the poor of Banbury and those residing within a radius of ten miles. In connexion with it is the Provident Dispensary, and a person can by a subscription of 1d. a week, or 3d. a week for himself and family, provided his children are not more than fourteen years of age, secure medical advice, medicine, and in case of serious illness, medical attendance at his own home.



THE HORTON INFIRMARY, BANBURY.—*Plan.*



THE HORTON INFIRMARY, BANBURY.—Mr. Charles H. Driver, Architect.

SEVERE THUNDERSTORMS.

We have a larger collection than ever of notes from all parts of the country as to the continuance of storms, and damages to life and property, but cannot occupy much of our space with their details, especially as the damages to buildings are mostly of a minor description, such as knocking off house-chimneys, and otherwise damaging houses, schools, tents, &c. Many persons have been struck by lightning, and more or less injured or killed, but the deaths are few by comparison with the number struck; and often the result shows strange escapes from any injury at all to the person, while portions of the dress were torn to rags. Insensibility or blindness for a short interval has been frequent. Among those killed was again a person in bed. Fright has killed some, and a horse broke his neck with his own halter from fright. Whole families have been struck, and yet none killed. At Derby, St. Mary's Roman Catholic Schools were struck, yet not one of 400 children in them was hurt. At Leicester a manufactory was set on fire, and at Tewkesbury a circus-tent was burnt up. A gentleman whom we know was taking shelter in the Holloway-road under a shop awning, when it was struck and shrivelled up in a moment by fire. Thunder is even now (Wednesday) rolling in this same district; and we hear that St. Giles's, Cripplegate, has just been rather severely injured, as also has Holy Trinity Church, Windsor. Stacks of hay and straw in various places have been burnt, and glass roofs broken. At Smithfield, a hundred thousand pounds' worth of meat was tainted by the recent sultry heat of a single day. The heart of England has suffered severely again since we last recorded the occurrence of these extraordinary storms, and Ireland has had its share of them. The accompanying floods in England have done much more damage than the lightning direct itself. At Douglas, in the Isle of Man, immense waves from the Atlantic have suddenly done much injury. These waves, and a peculiar vibrating motion of the sea, are supposed to have had something to do with the electric disturbances. An earthquake in the bed of the ocean might produce such waves and vibrations. Violent thunderstorms have swept over Germany and Switzerland. At Chaux de Fonds the Festival-hall of the Swiss Gymnasiasts was unroofed. Four persons lost their lives on the Zurich lake. Upsala (in Sweden) and its environs were visited by a terrible hailstorm on the 25th of July. The hailstones, as big as pigeons' eggs, covered the ground 11 in. deep; all the windows were smashed, trees broken, and the crops utterly destroyed in the district.

Altogether, these physical commotions have already far exceeded those which in 1868 preceded the great earthquake.

WHO GETS THE PROFIT?

Sir,—Permit one who lives on Pit Bank to say a few words anent the prevailing topic, Coal, and your remarks thereupon. In South Lancashire, during the fall last year, the price of steam coal at the pit's mouth ranged from 6s. 6d. to 7s. per ton. Since then there have been four advances of 10d. per ton each, and one advance of 2s. 6d. per ton; so that now the price of coal is from 12s. 6d. to 13s. per ton. During this time colliers' wages have advanced 10d. per ton only, while the cost of coal to the public has advanced 6s. 6d. to 7s. per ton. Sixpence per ton will cover all the extra expenses caused by increased wages to engine-driver, stoker, &c., cost of coal, oil, fodder for horses, leaving a clear additional profit to the owner of 5s. to 5s. 6d. per ton, making, in all, some 300 per cent. Now, sir, it seems to me a very fair and pertinent question to ask what this coal-owner does to deserve these enormous profits. One-seventh of the additional profit has been wrung from him by the workers, while he quietly pockets the other six-sevenths, and is, I hear, like Oliver, asking for more.

A complaint, noticed by you, has been going the round of the papers, that the colliers are spending their increased earnings in drink, and neglecting their work thereby. If this charge is true, it is, of course, much to be regretted, though my own observation does not bear it out. The increased cost of food and clothing alone would swallow up his increased earnings; so that now, if a collier drinks more, he must eat and wear less. But then colliers are, and have ever been, a very debased class, with no pleasures or desires other than their belly and their "dawg"; and if the public wants cheap coal, I am afraid colliers must be kept ignorant, as now, knowing no fear, and fearing no danger. Let the Education Act have force through a couple of generations, and I venture to doubt whether, in spite of any or all the securities against danger which the Legislature may be able to enforce, and human ingenuity devise, men will be found in sufficient numbers to raise as much coal as will be required to carry on manufactures alone in this country, even if our present ruinous export is stopped. No man of any education can be persuaded to bury himself in the bowels of the earth ten hours or even eight hours per day, so long as he can earn a living in the sunshine.

I cannot pass by this question of reduced hours of working without protesting against the tone of the complaints made by the employers, who seem to assume that workmen have no right to work less, whatever their remuneration may be. I say it distinctly, that no one who works for wages likes long hours, but will do all he can to make them as short as possible. Fancy, going down into a mine in the early morning twilight, and working there in darkness all the time the sun shines above, and returning to the surface just in time to see his last rays. Who but a slave would submit to this?

The hours of labour will be much shorter in the future than they have been in the past; and justly so, or why should we invent and use labour-saving machines, and more economical modes of working? When there are no *drones* in the country, and every person earns his dinner by brain or hand before he eats it, it will be time enough to complain of short working-hours, should the production be insufficient for our wants.

E. G.

A BOX-IRON.

Sir,—A new American box-iron for laundry purposes is advertised. It consists of a hollow box-iron, with a short bent flue at the top of the nose end, and a regulating draught-hole at the butt end, so as to form a small furnace, in which wood charcoal is burnt for the purpose of heating the iron. Will not the products of the combustion consist largely of carbonic acid gas, and is not the apparatus likely to be detrimental to the health of persons using these irons and breathing the gas thus thrown off?

R. M.

THE ROYAL AGRICULTURAL SOCIETY.

Sir,—I can sympathise with your correspondent of last week as to the behaviour of the Royal Agricultural Society in the case of the competition for two cottages, as they behaved in a precisely similar manner to a number of competitors sending in designs for the "best mode of laying out a lot of land for cottages for the labouring classes in various degrees of accommodation and size."

I took an immense amount of pains, trouble, and expense to send in a set of plans, and the result was, "No design comes up to the mark of the Society's ideas," &c. This was at the Leeds show, about twelve years ago.

J. Nunn.

OPENING OF THE NEW PIER AT HASTINGS.

The opening of this pier by Lord and Lady Granville, on the 5th inst., was an important event in the annals of Hastings and St. Leonards. The pier has been constructed after the model of the West Pier at Brighton, but the floor or deck of the pier is flush with the parade, from which it is approached, thus rendering steps unnecessary throughout its whole length, and at the sea end there is a pavilion or "palace on the sea," entirely closed in and capable, it is said, of holding about 2,000 people. The position of the pier is on the Hastings side of the dividing line between the two towns, being opposite the garden of the Sussex Infirmary. The deck, which is closely and smoothly laid like that of a vessel, is 45 ft. wide for half its length. At the shore end it gradually widens out to 190 ft., giving ample room for separate entrances on the east and west sides. At the south end or "head" there is an expansion until an extreme of 130 ft. by 300 ft. is reached. As the entire length from the shore seaward is 910 ft., it will form a promenade for visitors seeking to enjoy the sea-breeze of the south coast. The pavilion, or saloon, out in the sea, is in the Alhambra style. Its dimensions are 150 ft. long by 100 ft. broad, and 30 ft. in height. The possible strain, as well as the weight of this superstructure, have made it necessary to impart additional strength to the part of the pier on which it stands, and to that end the floor of the saloon is raised about 3 ft. above the general level of the deck, and the main girders beneath are arranged diagonally, so as to give greater stiffness. The columns supporting the saloon and the girders are so braced together that there is said to be no vibration even amid violent storms. A covered way, answering the purpose of a verandah is made all round the saloon on the outside, and beyond, at the head of the pier, is a wide open space, where a fine view of Hastings and St. Leonards is obtained, including the whole coast-line between Fairlight and Bex-hill. 300 cast-iron columns with screw-piles have been used in the structure. Towards the shore the piles have been forced into the solid rock 2 ft. deep, and the remainder have been driven to a considerable depth into the clay. The sides of the pier are occupied with a continuous line of seating to the extent of 2,600 lineal feet. For walking a total area of 75,000 superficial feet has been provided. The engineer and designer was Mr. Eugenius Birch, of London, and the contractors were Messrs. R. Laidlaw & Sons, of Glasgow, gentlemen who have held the same relative positions in the construction of the Brighton, Blackpool, and other piers. The amount of the Messrs. Laidlaw's tender was 23,250*l*.

A PROPOSED NEW CHURCH IN PIMLICO.

A new Mission Church is about to be erected in Pimlico, in connexion with St. Peter's, Eaton-square, which has for some time been so crowded that there is not accommodation for the constantly increasing congregation. A site has been secured on the waste land lying between the printing-office of the London, Chatham, and Dover Railway Company and Gillingham-street, and having a good frontage into Wilton-road. The part reserved for the church will give a ground floor accommodation for about 700 persons, and leave a space to be used at any subsequent period for enlarging the church or erecting schoolrooms. All the seats are to be free, but it is proposed to adopt some plan to secure the rights of those living in the district over strangers, by keeping their seats until a certain time.

PITCH AS A PROTECTION AGAINST DAMP.

Sir,—I should feel much obliged if any of your numerous readers could give advice, or the result of their experience on the following matter. Some years ago, in the erection of a large country house in an exposed position, where the outer walls were of stone and lined with brick-work, instead of having the south and western walls battened, I had a coat of Stockholm pitch paid completely over the whole internal surface of these walls; and whilst in a soft state the pitch was roughly scored with a stick, so as to form a key for the plaster, which was subsequently applied in the usual manner, and with three coats. The result was perfectly satisfactory. No damp of any kind has since appeared. The rooms were papered within a very short period of their completion without any subsequent discoloration, and there has been no annoyance from smell. I have subsequently applied it on brick walls with as satisfactory a result; but last year, in the erection of another large house, where the main walls were of flint, lined with brick, and covered with Portland cement on the outside, I had the inside walls rendered with pitch in the same manner as above described: the pitch seemed longer drying than usual, and the smell continued for a longer period. After the joiners' work was finished considerable annoyance was experienced from the smell of pitch, and some of it had to be taken down with a view to give air and vent to the smell. After leaving it exposed for two or three months, the annoyance seemed at an end; but now, on the return of the family from abroad and the occupation of the house, the smell seems to have returned, to the annoyance of every one. The builder declares that he used the best pitch, and that no tar was mixed with it.

Can any of your readers say why that which answered perfectly in former cases should prove

an annoyance in this case? And can they suggest any application which would counteract or remove the smell? As a protection against damp from the outside it answers perfectly.

T. H. W.

OPPOSITION TO THE PROPOSED NEW SOUTH LONDON CEMETERY.

The proposal to construct a new cemetery in the neighbourhood of Penge by the recently formed "South London Cemetery Company," is likely to encounter a considerable amount of opposition from several sources, on the ground that the site is unsuitable, the soil consisting of a dense clay, and unfitted for burials. The company propose that the cemetery shall occupy an area of 42 acres, and they have already secured the principal portion of the ground; an extension of 17½ acres is, however, required to make up the required 42 acres; but before obtaining this for cemetery purposes, the sanction and licence of the Home Secretary are necessary, and for these they are applying. The inhabitants of South Norwood are adverse to the cemetery being formed in the locality, alledging that the formation of a cemetery in a district comprising upwards of 900,000 inhabitants, would have a depreciating effect on the surrounding property, and encourage the erection of an inferior class of buildings. A public meeting has just been held on the subject, at which it was decided to oppose the granting of the licence by the Home Secretary, and a committee was appointed to carry out the object of the meeting. The Lewisham District Board of Works are also opposing the project, and a petition against the granting of the licence for the additional 17½ acres has been signed and presented to Mr. Bruce by the Board.

ORIGIN OF FIRES.

Sir,—Captain Shaw, the Chief Superintendent of the London Fire Brigade, has published, recently, a very useful work upon the nature of fire-risk, &c., which you have reviewed. A work, compiled by some competent person, upon the origin of fires in buildings, especially in ancient houses, would be useful, as scarcely a year passes without some old edifice being destroyed by fire in Britain. Neale's "Views of Seats," A.D. 1820, contains an engraving of Heythorpe House, near Chipping Norton, then a "stately residence," erected by Robert Archer for the Duke of Shrewsbury, A.D. 1705, and occupied by the Duke of Beaufort, A.D. 1820. Subsequently it was destroyed by fire, caused, I believe, by linen, which had been placed to dry, taking fire at night; and when I saw the place, in 1849, the walls alone remained. Frequently, a wooden beam or an over-heated flue causes the disaster. The fire may smoulder for several days, and break out at night unexpectedly. I believe that a plainly-written work, by some experienced architect competent for the purpose, showing the general reason of fires in edifices, especially in old buildings, with useful practical hints and suggestions, would be popular, and prevent some old houses from being destroyed before they might be without such information. If I were the owner of an old mansion, I would have it examined by a surveyor, at least annually. I think Loughton Hall, Essex, which I saw on fire in the winter of 1837, was burnt owing to a beam becoming ignited in a chimney.

Chr. Cooke.

PROTECTION OF IRON.

Sir,—Whilst admiring the construction of the scaffolding and the steam appliances thereon at the Town-hall, Manchester, yesterday (and, of course, the elegant structure within it), my attention was suddenly drawn to the rusty state of the railings inclosing the Albert Memorial, and the faded appearance of the heraldic painting and gilding; in fact, it appears to be too minute and delicate in character and detail for a work exposed to the elements.

How will the enormous quantity of gilding appear on the Rochdale Town-hall when it has weathered as many winters as the Memorial? Its renovation will be costly and dangerous.

I think it high time that some more permanent and inexpensive coating should be introduced for preserving iron from rust. Take, for instance, railings round tombs, first put up and neatly painted; families or friends of the departed leave the neighbourhood; a few years pass, and paint gives place to rust. Galvanised iron answers to a certain extent, but would hardly serve in this case.

I feel certain there is a fortune to be made by any one who will invent the desired material.

H. J. P.

UTILISATION OF SEWAGE WORKS AT LEEDS.

Tenders have been opened for the construction of a reservoir with twelve compartments, providing for a constant flow of sewage. The proposal of Messrs. Longley, Brothers, was accepted. The following is a list of the tenders:—

Boothman & Broomhead	£17,989 0 0
Helm & Co.	17,111 14 5
Weatherley & Rymer	16,467 0 0
Abbey	15,988 0 0
Whitaker, Bros.	15,400 0 0
Nichols	15,391 11 1
Longley, Bros.	15,186 2 0

Mr. Alfred M. Fowler, borough surveyor, Leeds, and Mr. W. W. Symington, Native Guano Company, London, are the engineers for the works.

THE COURTS OF JUSTICE.

In reply to statements by Mr. Cavendish Bentinck on Saturday last,—

Mr. Ayrton said his hon. friend had hardly done justice to his own views. Some time ago the hon. member for Whitehaven submitted for their consideration a motion which he then stated was four years too late, because he proposed that the whole question should be reconsidered; and he made some reflections on Mr. Street, as if he were incompetent to perform the duties for which he was appointed. The appointment of Mr. Street determined the style and character of the building to be erected; and that gentleman was singularly well qualified to carry out that style and to produce a building of as much beauty as any other architect that could be named. The hon. member had fallen into considerable confusion between the general plan which had been laid in the Library towards the close of last session and the more detailed drawings Mr. Street had since made, and which, no doubt, had from time to time varied in minute ornamentation; but the general scope of Mr. Street's design had not been altered since it was exhibited in the Library. No benefit would result from communicating to the House from time to time any change which Mr. Street might make in the ornamentation of the front of his building. In August last year the Treasury gave their sanction to the south front, and, according to contract, Mr. Street was bound to deliver the contract drawings which were necessary to enable the contractors to make tenders in February this year; but he deemed it desirable that the agents for the contractors should follow him with his contract plans and drawings, and that course was being taken; but as Mr. Street aimed at a great variety of ornamentation, he found that the contract plans and drawings required much more time than he anticipated, and, so far as he could judge at the present moment, the Office of Works would not be in a position to invite tenders for the construction of the building for the next three or four months. His hon. friend wished to know what was to be done with the approaches to the Courts of Justice, and with the land not required for the building. At present nothing was to be done with it. All the land would be required by the contractors for the enormous works undertaken, for the preparation of the stone, and shoring up the building.

Mr. Alderman Lawrence wanted to know whether the architect had entered into a contract under seal to carry out the works for a certain sum.

Mr. Ayrton replied that a contract for the performance of the work for a certain sum had been signed, and the time necessary for the completion of building would be between six and seven years.

Mr. C. Bentinck said that, having learnt there was no probability that the work would be proceeded with this year, he would go no further.

"UNFAIR COMPETITIONS: BRIGHOUSE."

Sir,—Having been absent from home, I have only just seen the letter you published on the 27th ult., under the above heading. It is so absurdly mistaken, or so utterly mendacious, that, as regards its author, it is unworthy of notice. In justice to your public position, however, it is necessary to advise you of the truth. With this view, I send you copies of *The Brighouse News*, of July 13th and 20th respectively; the former containing a list of the tenders originally submitted for the chapels, lodge, &c., referred to in the letter in question, and the latter an account of the reductions effected.

You will see that the total of the lowest tenders was not 6,000*l.*, but 2,931*l.* 5s., which sum included 275*l.* for boundary walling. Our estimate, made in March last, in accordance with the requirements of the Board, was, without the boundary walling, 2,000*l.* The comparison, therefore, lies between (2,931*l.* 5s. less 275*l.*) 2,656*l.* 5s. and 2,000*l.*, showing a difference of 656*l.* 5s., instead of 4,000*l.* The real difference is sufficiently amazing, without any such exaggeration as has been placed upon it by your ingenious correspondent; but it is by no means peculiar to the case in question, as may be seen by recent reports of similar affairs in this district,* and probably also in other districts,—perhaps even in your correspondent's own practice, if he has any.

The second of the two local prints herewith sent reports the value of the reductions proposed, namely, 488*l.* 19s. 7d., of which the Board, having been satisfied that the intended modifications could be effected without lessening the accommodation and without injuring the structural solidity of the buildings, adopted alterations which resulted in a saving of 418*l.* 13s. 11d., which left the amount of the lowest tenders 2,512*l.* 11s. 1d. Deducting from this amount the cost of the boundary walling, 275*l.*, we have 2,237*l.* 11s. 1d. to compare with our original estimate of 2,000*l.*

"I leave your readers to draw their own conclusions." The announcement referred to in the opening paragraph of the letter appears to have emanated from the same source, for it conveyed as much error as truth, and, practically speaking, failed in its gratuitous prophecy; but it had the merit of correcting itself to some extent by its own absurdity.

From what point of view the competition in question can be classed as an unfair one it is difficult to see, unless it be from that of a disappointed rival. Our position was gained under motto, by the plainest style of drawing, and neither Mr. Gay nor myself had the honour of being acquainted with any gentleman at the Board or in the district, nor had we the slightest "influence," nor did we attempt to gain it.

When a gentleman, fired by public zeal, seizes his pen to meddle with the business of others, it is obviously his duty to make sure of his facts. In the absence of some approximation to accuracy, he exposes himself to certain natural suspicions, which belie your correspondent's signature and his professed motives. If, however, he has acted in *bona fides*, he cannot fail to show his regard for truth and justice, by publishing a statement, signed with *his own name*, indicating the means by which he has been led to make such reckless and unfounded charges; and he would do well in future to remember that it is not necessarily a fraud to win a competition; and that fairplay is due even to those who succeed.

F. Bartram Payton.

* Vide *Bradford Observer*, July 19.

** The writer of the letter in question sent us a newspaper, in which the amount he named was given. He was probably misled by this.

THE FIRE AT ST. MARY'S, PADDINGTON.

Sir,—I feel sure that many of your readers, as well as myself, will be interested in hearing a little more as to the exact cause of the late fire at St. Mary Magdalen's Church, Paddington. The newspaper report states that a layer of pitch was spread over the space between the rafters and the slates, and that this through an accident caught fire, and thus ignited the whole roof. Is not pitch a somewhat unusual substance to employ in such a situation? I have often described "*patent incombustible roofing felt*," and I do hope that the latter is really what it professes to be. Would it be asking too much of Mr. Street (the architect of the church), to give some slight explanation as to the origin of the fire?

Edmund B. Ferrey.

"TREATMENT OF BUILDERS."

With reference to a letter in our last under this heading we have received a communication from a firm of solicitors in Hull, on the part of Messrs. Smith & Brodrick, architects, stating, "1. That no acceptance of any tender was made until after that from the 'Scarboro' Builder' had been received. 2. That the 'Scarboro' builder's' tender was forwarded by the 4·40 p.m. train from Scarboro' on Friday, and not on Saturday. 3. That his tender was 700*l.*, and not 1,400*l.*, below the lowest previously delivered." We willingly insert this contradiction of the statement in the letter referred to, and must request an explanation from the writer of the latter.

MASTERS AND MEN.

Sir,—Will you allow a workman to say a few words on the question of wages? I think that the question of wages, when looked upon as a mere question of political economy, or, as your correspondent "H." styles it, "enlightened self-interest," will always tend to promote antagonism between employer and employed. While, on the other hand, if the employer treats the workman as a man having a soul as well as himself, and not as a bale of cotton or any other commodity that brings him in so much cash, by so doing he will create a reciprocal feeling on the part of the workman, making him feel that he is a kind of mutual partner in the firm where he is employed, and he will feel it a privilege to do his best for his employer. I am afraid this will only be brought about by a better education, both on the part of masters and men, and the introduction of Christian principles in the relations of every-day life.

J. R. Gough.

INJUNCTION AGAINST "INTERPOLATING" A HOUSE.

In the case of Bidgood *v.* Preston, heard in the Rolls Court, the plaintiff, who is owner of No. 21, Brunswick-terrace, Brighton, sought to restrain the defendant, a gentleman who had recently purchased the adjoining corner house, No. 20, from "interpolating" a house in the rear of No. 20, between it and No. 57, Brunswick-square. The plaintiff relied on a covenant entered into by the defendant's predecessor in title with the original owner of the property. The defence was, that this and similar covenants affecting the other houses in Brunswick-terrace were abrogated by a clause in a local Act passed in 1830, and that if the covenant was still in existence the plaintiff was precluded from enforcing it by acquiescence. The Master of the Rolls said the Act of 1830 had no application to the covenant in question, and the suggestion of acquiescence only came to this, that some owners of houses in other parts of the terrace had not chosen to insist on their rights. A perpetual injunction, restraining the defendant from erecting any building at the rear of No. 20, except appropriate domestic offices, was granted.

REIGATE AND ITS REQUIREMENTS.

Conspicuous amongst the places that "have left undone that which they ought to have done," stands Reigate—a town well known to Metropolitanians, being the same distance in point of time from the City that Notting-hill is. Nature has done her utmost to make Reigate one of the most delightful retreats for such of the human kind as are addicted to commotion; it is shel-

tered from the Polar blasts of winter by the highest of the Surrey hills, and the heat of summer is tempered by an abundance of umbrageous trees. It would appear, however, that the more bountiful nature is, the more remiss the recipients of that bounty are. As soon as the South-Eastern Railway opened up this truly Arcadian district, paterfamilias, "babbling o' green fields," was not slow to betake himself and progeny to a spot hitherto given up to naïads and satyrs, and soon many of the most sylvan nooks were bought and built upon by him, and the naturalist who may be dubious as to whether man is gregarious in his nature might have been crushed by an opponent's argument, backed up by such a fact as this migration. In a single decade the population was doubled. Dives was hugely represented by the migrants, and, as usual, he did his utmost to shut Lazarus out of this earthly Paradise; and, to a great extent, he was successful. The great unwashed came in the train; but it dwelleth apart in rows of ill-built, draughty tenements, that afford a striking contrast to the luxurious villas of the opulent. There was a time, long past now, when a house-dweller's duties ceased at his garden-gate, and there are many who call it "the good old times," and would like them restored. "Every man for himself and the devil for us all," is their motto. The wise sanitary laws that our forefathers in their wisdom did not pass compel us all to look after ourselves collectively as well as individually, and if we are not bound to administer to our neighbour's stomach, we must satisfy ourselves that his house is fit to be occupied by a nobler animal than a pig. To the disgrace of Reigate, this part of the duties of the inhabitants has long been scandalously neglected, and the balmy air has become fetid and pestiferous, fevers frequently recur, and the smallpox has paid the town a visit, and left its mark behind; and the wonder is, that it did not depopulate whole streets, for the sanitary arrangements and water-closets are more primitive than those of Moses. We expect to find such things in parts of Staffordshire, but to find them in a refined and Elysian London suburb takes our breath away, literally as well as metaphorically. A few days ago, the local board mulcted a Reigatite for building a house of tea-chests: surely those nasty landlords that have not provided proper closets ought to be made to explain the reason why. Such a state of things ought not to be tolerated a single day.

Many are asking how it is that for three or four years there has been no migration to Reigate, and that building operations have entirely ceased. Some attribute it to the heavy rates that the new drainage will make necessary, but is it not because the town has been left undrained until its fair reputation has been damaged? There are several tenantless villas, which have evidently been occupied; perhaps their late occupants have fled to a place less obnoxious to the olfactory organs.

Amongst the other sins of omission that strike a visitor to Reigate are the absence of channels in many of the thoroughfares, the paucity of pavement, and the bad street architecture. The Public Hall scarcely has a façade, and though one may be close upon it, he will have to "seek diligently till he finds it;" but a hideous Georgian town-hall is conspicuous in the extreme, and could not possibly be overlooked. The former is Gothic, but of the most insignificant type.

The castle precincts, which are situated in the centre of the town, have been made into a public garden, but more evergreens are wanted, and the introduction for shade of a few more trees would not lay "the trustees" open to the charge of vandalism. I could not learn that the band of the volunteers play so often as twice a week, or even twice a year. I should suggest to the trustees that the public would be drawn thither more than it is if 10*s.* or 1*l.* per week were spent upon music, and more seats would be required to make the gardens perfect.

GARGOYLE.

THE NEW SCHOOLS OF SCIENCE AND ART, AND MUSEUM, AT GLOUCESTER.

THIS edifice, except a few minor portions, and some of the fittings, may be said to have been completed. A view and plan of the edifice will be found in our volume for last year, pp. 466–467. Messrs. Fulljames, Waller, & Son, of Gloucester, architects, prepared the plans; and Messrs. King & Godwin are the contractors. The style is Gothic of the thirteenth century. On the basement-floor rooms are provided for the curator, hat and cloak rooms and lavatories for the male art-students, and cellars. The ground-floor consists of a general entrance, with carved work, an inclosed porch, hall, and staircase. Entered from the hall, on the left-hand side is the museum and library, a room 60 ft. long by 20 ft. wide, and 16 ft. high. Immediately facing the main entrance is the door leading to the lecture theatre, a room 28 ft. by 26 ft., and 17 ft. high. This is to be used in common by science and art students; it is fitted with benches, and has separate entrances for each department. The remainder of the accommodation on this floor is devoted exclusively to the uses of the science school, and comprises a class-room, 19 ft. 8 in. by 21 ft.; a master's and preparation room, and a lavatory, 24 ft. by 24 ft., with an open-timbered roof. There is also a separate entrance-porch, with cloak-room, lavatories, &c., appropriated exclusively to the use of the science students. The laboratory is a low building on the north side of the main block. It is placed as near as may be to the other rooms connected with the science school, while it is made a detached building, to admit of its being easily ventilated when scientific experiments of certain kinds are being conducted. By means of the staircase from the hall the rooms on the first floor are approached. The whole of these are devoted to the use of the school of art. They consist of an elementary room, 34 ft. 3 in. by 20 ft.; and a modelling-room, 18 ft. by 12 ft., each 20 ft. high to the collar-beams of the roof; a large painting and advanced class-room, 60 ft. by 20 ft., and 22 ft. 6 in. high to the apex of the open roof; and a master's room, 20 ft. by 12 ft. There are also cloak-rooms, lavatories, &c., for the use of the lady students. The roof of the large painting-room was suggested by the architects in order to obtain a perfectly uninterrupted light, free from wall-plates and other impediments which cast shadows. The building has been fitted with warming and ventilating apparatus by Messrs. Hayden, of Trowbridge. The building is erected of stone of the district, lined with brick, with Bath stone dressings. The roofs are covered with Broseley tiles, and the timbers on the inside, where visible, are stained and varnished. At the top of the staircase is the Munich glass window which Mr. J. D. T. Niblett intended to present to the cathedral, but which could not be placed therein because a contemplated change in the tracery was objected to by Mr. Gilbert Scott. It is intended as a memorial of the founders and providers of Sunday schools in this neighbourhood,—Mrs. Bœvey, of Flaxley, and the Rev. T. Stock and Mr. R. Raikes, of Gloucester; and was executed by Chevalier Max Ainmiller, superintendent of the Royal Glass Works at Munich, under the direction of Mr. Niblett. It is partly heraldic, and also contains representations, in the centre, of Christ blessing two kneeling boys; on the left, a matron with infant in arms, directing her little daughter to Christ; and, on the right, two of the disciples rebuked. Over the central canopy is a hand in glory, and dove below.

CHURCH-BUILDING NEWS.

Waterford.—The small church which has been erected at Waterford, at the sole cost of Mr. Robert Smith, of Goldings, has been consecrated by the Bishop of Winchester (in commission for the Bishop of Rochester). The hamlet of Waterford is an outlying portion of the parish of Bengeo. The building now erected in the hamlet will be the chapel-of-ease for the mother church of the parish. The new church is dedicated to St. Michael and All Angels, and the architecture is Early Geometrical. Mr. H. Woodyer, of Graffham, near Guildford, was the architect. The edifice is in plan a parallelogram, consisting of chancel and nave, and will seat 150 persons. Attached to the north aisle of the church is a vestry and organ-chamber, having communications with both the chancel and nave. There is also a south porch to the nave, framed with open tracery, turned shafts, &c. The steeple, porch, and fittings are of English oak. The walls are built of concrete, with Kentish rag facings and brick linings. The windows, doors, and dressings generally are of Bath stone, and the roof is covered with Broseley tiles. At the west end of the church is a shingled broach or steeple seventy feet high, to contain the bells. This steeple is supported upon cambered tie-beams, walls, posts, and arched braces, starting from solid stone-wall shafts below. The pavements are from Messrs. Minton's. The four west windows and the chancel windows have temporary glazing, the painted glass ordered for them not being completed. The other windows are filled with uniform panel-flowered quarries. The church will be lighted with coronas by Messrs. Hardman, of Birmingham. The organ, with an illuminated front, was built by Messrs. Walker & Sons, of London. In the winter time the church will be heated by means of hot-air apparatus. The churchyard is surrounded by a boundary wall of stone, and at the entrance there is a lych gate, and porch with gabled roof surmounted by a cross. The contractor was Mr. C. Chappell, of Tring, and Mr. Davidson was clerk of the works. All the oak for the sittings, roofs, porches, and other portions was found by Mr. R. Smith, and the additional cost of the structure has been about 2,800*l.* Mr. Smith has also built close by three houses for poor widows, specially designed for the health and comfort of the inmates. They are built with porches, gables, and timbered beams in the walls, and look in keeping with the lych gate at the entrance to the churchyard. Two of the rooms in one of these cottages are to be devoted to the purposes of a mission room and village library. Mr. Smith has also erected here two model labourers' cottages. Mr. Sheffield, of Bengeo, was the builder.

Bromsgrove.—The corner stone of a new church has been laid at Bromsgrove. The site is at the upper end of the Birmingham road. The ground plan of the church provides accommodation for upwards of 600 people, exclusive of the choir benches. The church will comprise nave and side aisles, tower at north-west corner, porch on south side, chancel with apsidal termination, and an organ-chamber and vestries for clergy and choristers. A basement will be sunk to accommodate the heating apparatus. The easternmost lay of aisles is slightly projected, and gabled in the transeptal form, which gives the church exteriorly, according to the perspective view, a cruciform appearance. The style is transitional. A spire with tower, rises at the north-west corner, its altitude being about 175 ft., the upper part of the tower containing the belfry, with ornamented double lancet lights, with louvres for the passage of sound; but it is not contemplated to execute this upper portion of the tower and spire at present, owing to limited funds. The church is intended to be built with the local sandstone, the walls being lined inside with buff-coloured bricks, relieved with stone strings and bandings, the dressings, arches, window facings, &c., being executed partly in Bath, and part in local grey sandstone. The amount of the contract, which is undertaken by Mr. Estcourt, of Gloucester, is 3,920*l.* towards which a sum of about 3,300*l.* has been collected. The foundation has been raised to the plinth, and the corner stone forms the base of one of the buttresses at the west end. It is of Portland stone, and bears, incised, a Latin cross, and the letters "A.D., 1872." Mr. J. R. Horton is the architect, and Mr. Estcourt, the contractor.

Whittlesey.—St. Andrew's Church, Whittlesey, has been restored and reopened. The cost of the portions already restored is about 1,500*l.*, and further restoration is contemplated as funds become available. After obtaining the major portion of the requisite funds, Mr. R. R. Rowe, architect, was directed to prepare plans for a restoration of part of the fabric; tenders were invited; and Mr. W. Elworthy, of Upwell and Wisbech, became the contractor. The first work was to clear every particle of wood fittings from the interior. Upon removing the boarded and paved floor, the church proved to be a great mausoleum; it was literally honeycombed with coffins, upon which the floors rested: as the coffins from time to time decayed, the floors sank, and the atmosphere within the building produced nausea. All the vaults have since been arched over, and the whole area of the church covered with concrete; holes have been cut through the walls so as to ensure a thorough ventilation of all boarded floors; the soil in the churchyard for 30 ft. in width from the church has been lowered, so that persons now step up into the building instead of stepping down as formerly; a new oak roof has been put upon the north aisle of the nave, and covered with lead; the walls generally have been underpinned, and the mutilated stonework re-set and restored; new stone parapets, with coping and gable crosses, have been fixed where needed; cast-iron pipes have been provided for conveying rain-water from the roofs, and underground drains laid in. The interior presents a very changed appearance: two of Gidney's underground stoves have been fixed; the passages,

chancel, and sanctuary paved with tiles, many being in ornate patterns; new boarded floors have been laid under all the seats; the old chancel stalls are re-arranged, and the whole of the nave and aisles filled with open seats of one uniform pattern, in which provision for kneeling has been made. The windows having a north aspect, are glazed with ordinary white glass, in lead quarries and coloured margins, those on the sunny sides of the church are filled with thick obscured glass in two tints, so as to obviate the necessity for blinds. A stained-glass window has been given by the vicar, Dr. Burgess. It is placed at the east end of the chancel, immediately over the Communion-table; it is nearly the width of the chancel, and is in five lights, the subjects illustrated being the five principal events in the life of our Lord; the figures are nearly life-size; they comprise the Nativity, Baptism, Crucifixion, Resurrection, and Ascension. Below each figure is a medallion; above is canopy-work. This window has been painted and made by Mr. Constable, of Cambridge, from the design of the architect. Mr. G. W. Johnson, of Peterborough, has presented painted-glass figures of two saints for the centre light of the west window in the tower, and other contributions of stained glass will be thankfully accepted by the vicar and churchwardens.

London.—The foundation-stone of a new church for St. Mark's district, Victoria Park, has been laid by Lord George Hamilton, M.P. The church will be built by Messrs. Browne & Robinson, from the designs of Mr. Blomfield, and will be in the Early English style, cruciform in plan, and consist of nave, side aisles, transepts, and chancel. The roof will be open, and the building, when completed, will accommodate 700. The new church will cost 4,000*l.*——The church of All Saints, Blenheim-grove, Rye-lane, Peckham, has been consecrated. The building is fitted with all the modern appliances. The roof is of stained pine, as are also the pews. The general character of the building is Gothic. A school-house has been provided. The building is detached, at a slight distance from the church. ——A new church, dedicated to St. Luke, and situate in Evelyn-street, Lower-road, Deptford, has been consecrated by the Bishop of Rochester.

Birkdale.—St. Peter's Church has been consecrated by the Bishop of Chester. The church is in the Decorated style of Gothic architecture, and consists of nave, 81 ft. 5 in. by 21 ft. 8 in.; north and south aisles, 81 ft. 5 in. by 11 ft. 4 in.; chancel, 22 ft. 4 in. by 18 ft.; with organ at south-east, opening into chancel and aisles, and a vestry at the north-east. There is a tower 15 ft. square (externally) and 53 ft. high. The building will accommodate 600 persons, of which 295 sittings are free. The external stonework of the whole is of Cefn stone, the facings being of Upholland stone parpoint in courses. The contractor for the whole was Mr. Hugh Yates, of Liverpool, and the works were carried out by Messrs. T. D. Barry, also of Liverpool.

Welton.—The foundation stone of a new church at Welton has been laid by the wife of the Bishop of Carlisle. The edifice will be small and unpretending, in the style of the latter part of the thirteenth century, modified to the requirements of the nineteenth; and will consist of a nave and chancel of one height, with a gabled projection for the vestry and organ chamber. The outside length will be 61 ft. 6 in., and the width 22 ft. A bell-cote is inserted in the west end; not, as usual, at the apex of the gable where the flues are carried up, but at the lower part of it. The church, when completed, will accommodate about a hundred. The architects are Messrs. Cory & Ferguson, of Carlisle; and the contractors are, Mr. James Wilson, of Gaitsgill, for the mason work, and Mr. Pearson, of Wigton, for the joiner's work. The material used will be the red stone from Chalk quarries in the neighbourhood.

Barnsley. — The foundation-stone of a new church about to be erected at Worsborough Common has been laid by the Archbishop of York. The architects are Messrs. Heeley, of Bradford. The church, to be dedicated to St. Luke, will be of Early Decorated Gothic character, and will consist of a nave, 53 ft. by 23½ ft.; and chancel 23½ ft. by 18 ft., and an organ-chamber and vestry on the north. The church will accommodate 212 adults, and the cost, exclusive of boundary walls, will be 1,300*l.*

Barnard Castle.—A meeting of the parishioners, duly convened, has been held to consider the plan and estimate furnished by Mr. Fowler, architect, for the restoration of the church tower. At the outset, Mr. W. Watson, jun. (Startforth Hall) inquired why Mr. Haswell, who had so successfully restored the church, had not been engaged in the restoration of the tower? Mr. Watson (Spring Lodge), and Mr. Richardson contended that Mr. Haswell, in his former proposition for rebuilding the tower, had advanced vague estimates, ranging from 500*l.* to 1,250*l.* His restoration of the chancel also had not given general satisfaction. Ultimately the meeting was adjourned until the return of Mr. Holmes, the vicar's churchwarden, who, it was agreed, ought to be consulted.

Ashton-upon-Mersey.—The foundation-stone of the new church of St. Mary Magdalen, Ashton-upon-Mersey, has been laid. It is being built from the designs of Messrs. W. Wilson & Oldham, of Manchester, in the Early Decorated style. Its whole cost, including organ, the laying out of the grounds, &c., is estimated at 6,500*l.* The nave is 83 ft. by 43 ft., and has north and south transepts. The organ-chamber is on the north side of the chancel, which is 13 ft. by 19 ft.; and the vestry is under the tower on the south side. The entrances will be from the south porch and at each transept. The church will seat 650 persons. Mr. Brooks, who gave the land, and four others, gave each 500*l.* towards the building fund.

Hutton, near Kendal.—The works are in progress for a new church at Hutton, near Kendal, dedicated to St. John the Baptist, the old church being entirely removed as dangerous and beyond repair. Originally, the church was one of the most ancient in the diocese, but rebuilt about 100 years since, when all vestiges of the old structure disappeared. The new church will consist of a nave, 54 ft. by 26 ft., without side-aisles, an apsidal chancel, porch, vestry, and organ-chamber, and a belfry-spire at the south-west corner, 55 ft. high. The style is the thirteenth century. Materials—the dark blue stone of the locality, and white freestone dressings, open-timbered stained roofs throughout, seats and church furniture of pitch-pine and oak; sittings for about 200. The architects are Messrs. Brade & Smales, of Kendal; Mr. John Fawcett, of Hutton, is the contractor.

Bodmin (Cornwall).—At last there appears some hope that the long-contemplated restoration of this fine old church will be commenced. Plans have been prepared by Mr. Withers, of London, and a faculty is now being obtained. The estimated expenditure is about 6,000*l.*

Bridgnorth.—The battlements around the summit of the new tower of St. Leonard's Church have been completed, and when the pinnacles, with their carved crockets and finials, now just commenced, are completed and fixed, the tower will have assumed its true and full altitude, 110 ft. The carvers have chiselled out the gargoyles at the four angles of the parapet. These are each 4 ft. long. They are designed to carry 4-in. lead spouts. Upon the upper cornice, as well as around the turret and upon the string-course, lower down, a number of other animals, principally grotesque, will be carved; whilst the pinnacles of the tower and those around the turret will be decorated with crockets and finials, with human and other heads at the base. The label moulds of the belfry windows will also be stopped by sculptured heads and foliated corbels. The niche on the southern side and immediately over the doorway will be carved; the upper parts will be groined, and surmounted by a labyrinth of pinnacles. It will be supported beneath by an angel with extended wings. The jambs of the doorway and adjacent parts will be ornamented with carving, in tracery, and pinnacles. Inside, in the groining beneath the belfry, all the intersection will be enriched by carved bosses. The style of ornament to be used throughout will be fifteenth-century in character, according to the architecture of the tower.

Saltburn-by-the-Sea.—The Church of Emmanuel, Saltburn-by-the-Sea, which stands on the Marske high-road and adjoining Windsor-street, has been consecrated by the Archbishop of York. The Earl of Zetland presented the site, and Messrs. J. P. Pritchett & Sons, of Darlington, are the architects. The building is Early Decorated, and comprises nave, north and south aisles (each 89 ft. by 55 ft.), north and south transepts (each 24 ft. by 12 ft.), chancel (30 ft. by 24 ft.), with vestry, organ-chamber, and porch; together with a tower, 100 ft. high. To have carried out the whole of the plan would have involved an outlay of 7,500*l.*, or thereabouts, and provided accommodation for a few short of 1,000 persons. The committee, however, decided for the present only to proceed with the nave, north aisle, and north transept, which are now completed, and afford accommodation for 598 persons. This portion of the scheme was perfected at a cost of a little over 4,000*l.*

Chislehurst.—Christ Church, Chislehurst, was consecrated on the 29th ult. by the Archbishop of Canterbury. The building is placed on the summit of a site presented by Mr. N. Strode, of Camden Park. The church is Early Decorated, after designs supplied by Messrs. W. G. Habershon & Pite, of London, architects. Accommodation is provided for 525 adults, and care has been taken to give every facility for egress. The church consists of nave, with clearstory, aisles, north and south transepts, and chancel, with vestry at north-east angle. Externally it is built of Kentish rag stone in regular courses, with dressings and ornamental parts executed in Bath stone, and roofed with Whitland Abbey green slates and purple Bangor in alternate courses. A lofty tower with spire is placed at the western extremity of the nave, and is utilised on the ground floor as one of the principal entrances, and in the next stage as an organ-gallery, approached by a turret staircase. The interior has a nave arcade, with carved capitals, and the Bath stone has been relieved with red Mansfield for the smaller columns, which carry the roof principals in nave and chancel. The roofs throughout are open timber, boarded and felted. The chancel has an apsidal end, with two-light windows in each compartment, and the floor is laid with ornamental tiles. The pulpit and reading-desk have been placed in the most convenient positions for commanding a view of the whole congregation. The aisles are paved entirely with red and black tiles laid diagonally, with black margins, and the windows are filled with cathedral glass. The internal dimensions of the church, exclusive of the chancel, are 72 ft. by 53 ft. The general works have been carried out by Mr. Carey, of Highgate, builder; the tile floors by Mr. Colla, of Victoria; the gas-chandeliers by Mr. Berry, of Pimlico; and the ornamental ironwork to boundary fences by Messrs. Hart, Son, Peard, & Co., of Wych-street.

Derby.—The new Church of St. Anne, Derby, has been consecrated. Mr. W. Mundy, of Markeaton Hall, made a grant of the land for the site. The dimensions of the ground upon which the church is erected are approximate to those of the ground on which the schools will be built, viz., 105 ft. from east to west, and 66 ft. from north to south. In arranging a plan for a church to accommodate 600 people on so small a plot of ground, it was necessary to occupy nearly the whole of the area; and accordingly the east, west, and north walls are placed close to the boundaries, with a passage on the south side for access to the east end of the church. The church consists of nave, with north and south aisles, and chancel, with a north aisle for children, and on the south side an organ-chamber and two vestries for choir and clergy. The general internal dimensions of the building are as follows:—The nave and chancel are of one uniform width and height, and are 95 ft. long by 26 ft. wide, and 30 ft. high to the wall-plate; the open timber roof will make the total height 50 ft.; the width of the aisles is nearly 10 ft. The principal entrances are at the west end near the street, and others are provided eastward both for the vestry and the children's aisle. The body of the church is fitted with open seats, and the chancel with stalls. The church is built entirely of red bricks, those for the interior and for the windows and doorways being Spondon best pressed bricks. Stone is introduced only for the pillars of the arcades, and for the tracery of the clearstory windows. In design the church is very simple, and has to depend upon the proportion of the several parts for its effect; but at any future time, when funds are forthcoming, there will be ample opportunity for painting and wall-decorations, as well as for stained glass and similar embellishments. The architect is Mr. F. W. Hunt, of London; the builder, Mr. Robert Bridgart, of Derby; and the office of clerk of the works has been jointly performed by several members of the committee as an honorary appointment. A bell, weighing nearly 6 cwt., has been supplied by Messrs. Mears & Stainbank, of London. The carving has been executed by Mr. Tinkler, of Derby. The heating and the ironwork and gates for the chancel-screen have been executed by the Derwent Foundry, who have also in hand the pulpit, which will be entirely of metal-work. The font is the workmanship and gift of Mr. Bateman. The reredos

is likewise a gift. The alabaster and the cross, and filling in of the panels, is the gift of Mr. J. C. Part. The workmanship of the alabaster and marble is that of Mr. S. Keeling, a working man, done entirely in his overtime. The builder's contract was 2,750*l.*, but other expenses raised the cost of the building to 3,200*l.* Temporary day and Sunday schools, capable of accommodating 300 children, have been erected, but it is not intended to proceed with the erection of permanent schools at present.

Swine.—The Church of St. Mary, at Swine, has been re-opened by the Archbishop of York, after restoration. The roof was flat and plastered, which entirely shut out from view the tracery of the upper part of the window. The roof is now of open woodwork, being supported by the side walls by means of footings. Three of the old oak beams have been retained, and have been varnished. The altar is reached by four broad steps and foot-piece round the communion-table. The body of the church is divided from the aisles by four bays. The arches rest upon low Norman pillars, surmounted by capitals bearing engrailed carving. The ancient choir-stalls have been preserved, and supplied with new frontals of stained deal. The floor, formerly of brick, now consists of Minton's tiles. The old seats were high-backed ones, but they are now open benches of stained deal. The gallery at the west end has been taken down, and in the space are the seats for the school children. The work of restoration was done by Messrs. Padbury & Son, Selby.

SCHOOL-BUILDING NEWS.

Wood Green (*London*).—The foundation stone of new schools, to accommodate 300 children, in connexion with St. Michael's Church, Wood Green, has been laid in the Colney Hatch-road, by Mrs. Pearson, of Nightingale Hall, who presented the site. The schools are being erected by Messrs. Jackson & Shaw, whose foreman, Mr. Bailey, arranged the preliminaries for the ceremonial. The building will be in the old English village-school style.

Camberwell.—New school buildings have been erected in Camberwell New-road, in connexion with the new Church of St. John the Divine, now being erected in the Vassall-road, and have been formally opened, with some ceremony, in the presence of a large body of the clergy and laity. These schools, with spacious playgrounds, are gifts of an anonymous donor. The building, at the north-west angle, has a tower and spire about 20 ft. in height above the main building. The buildings contain a boys' and girls' school and class-rooms, in addition to a master's house, and committee and board rooms. It is intended to use the boys' school for Divine service on Sunday evenings, in addition to strictly school purposes.

Hertford.—A meeting of the subscribers and friends of the Cowper Testimonial and Abel Smith Memorial School has been held at the town-hall, to consider the necessary steps to be taken for the purpose of erecting school-rooms for 120 girls and infants, in connexion with the St. Andrew's Schools, on a site in the Hertingfordbury-road, which has been given by the Marquis of Salisbury, and is approved by the Government. The chair was taken by the Rev. C. N. Williams, rector of St. Andrew's. A committee was appointed to collect subscriptions and carry out the work, with power to add to their number.

Newcastle.—The foundation stone of Roman Catholic School-buildings in connexion with the church dedicated to St. Dominic, in course of erection at the Red Barns, Newcastle, has been laid by the (R. C.) Bishop of Hexham and Newcastle (Dr. Chadwick). When completed, the buildings will consist of three separate schools for boys, girls, and infants, and will accommodate above 800. The schools for boys and girls will be each 67 ft. by 30 ft., and will be placed end to end, so that the whole may be thrown into one by raising the revolving shutters which form the division. This arrangement will provide a room 134 ft. by 30 ft., for meetings and social gatherings. Each of these schools will have a class-room, 22 ft. by 17 ft. The infant school will be 40 ft. by 25 ft. There will be entrances for boys and girls and infants in separate streets. The church of which the schools are an adjunct is advancing fast towards completion. Both church and schools are being reared by the Dominican Fathers.

Burslem. — The chief stone of Primitive Methodist new schools has been laid at Burslem. The schools will be two stories in height, and will be erected from the plans of Mr. James Watkin, by Mr. John Grosvenor, of Tunstall. The building contract, exclusive of the land, is 257*l.*

FROM SCOTLAND.

Galashiels.—Operations have been commenced towards the completion of St. Andrew's Roman Catholic Church, Galashiels. The church was partly built in 1856, in the Gothic buttressed style, but was not then finished, owing to the want of funds, and also to the fact that at that period there was a comparatively small settled population in the district belonging to the R.C. Church. The present work is from plans by Messrs. Goldie & Child, architects, London, and adds 40 ft. to the length of the building, with an ornamental frontage to the river. The front elevation, according to the design, is 72 ft. high and 56 ft. wide, flanked with octagonal buttressed towers of the same height as the centre elevation. The principal feature in the front elevation is a Gothic window, 22 ft. by 11 ft. 6 in., with four mullions in the centre.

Miscellanea.

Liverpool Architectural Society's Excursion.—On Saturday, the members of the Liverpool Architectural and Archæological Society held their annual excursion. A party of about thirty gentlemen and two ladies assembled at the Royal Institution, Colquitt-street, and started thence. Under a glorious summer's sky they proceeded, *viâ* Walton, to Kirkby. At Kirkby the party visited the new church dedicated to St. Chad, where they were met by the Rev. Canon Hornby, who explained the various points of interest about the church. At Aughton, near Ormskirk, a visit was made to a new church on the crest of a rising ground, about midway between Aughton and Ormskirk, where it forms a conspicuous object in the landscape. The church was designed by, and has been erected under the superintendence of, the Messrs. Hay, who are members of the society. Considerable time was spent in examining this church and its decorations, after which the party proceeded to Halsall, where they were met by the Rev. Mr Blundell, the rector, who conducted them over the church, which is undergoing a restoring process. The rector also conducted the party to some ruins, which are supposed to have been part of the residence of monks or friars who attended from Burscough to minister in the church. The rector then invited the party to lunch. A rather long drive brought them to Rufford, where the Old Hall, the residence of Sir Thomas and Lady Hesketh, was visited, and some quaint old carved oakwork was inspected; after which a small church, erected by another of the members of the society,—Mr. Davies,—was examined. About seven o'clock in the evening dinner was served in the Hesketh Arms Hotel. The return journey was commenced shortly after nine o'clock, and at a quarter past twelve the vehicle pulled up in Lime-street.

Girls' Public Day School Company.—A company is being formed to establish and maintain in such parts of London and the provinces as may from time to time be decided on, superior day-schools, at a moderate cost, for girls of all classes above those provided for by the Elementary Education Act, and on the general model of the North London Collegiate Camden-street Schools for Girls. There are some excellent names on the council, and many shares have already been taken. It is intended to open the first school as near as suitable premises can be obtained to the South Kensington Museum as soon as a number of shares shall have been taken up sufficient in the opinion of the council to guarantee the success of the undertaking. The school system will be specially adapted to meet and correct the defects pointed out in the Report of the Schools Inquiry Commission: — "Want of thoroughness and foundation; want of system; slovenliness and showy superficiality; inattention to rudiments; undue time given to accomplishments, and these not taught intelligently or in any scientific manner; want of organisation." Serious endeavours will be made to train the pupils for the practical business and duties of life.

Sanitary Precautions.—The following sensible suggestions have been issued by the Hackney District Board of Works:—Clean out the water-butt or cistern frequently; boil the water before drinking it, and filter it through a charcoal filter. Keep the house, especially the bedrooms, clean and well ventilated, and use carbolic or other disinfecting soap for scrubbing the rooms. Keep the body clean by daily baths or washing the body all over with tepid or cold water, according to the state of health. As far as possible avoid excessive exercise and exposure to the mid-day sun. Do not eat unripe or stale fruit, stale fish, or tainted meat, and be especially careful to keep infants' food sweet. Be very temperate as regards porter, ale, or other fermented liquors. Two or three times a week pour down the water-closet and all the drain-traps water containing two table-spoonfuls of chloralum or carbolic acid in half a gallon of water. Be very careful to keep the trap on the sink and other drain-openings. Throw a little carbolic acid or chloralum, or, better still, chloralum-powder, into the dust-bin. The pipe, if any, in the cistern should have a leaden "S" trap placed on the top thereof to prevent contamination of the water with sewer-gases. If there be not a separate cistern for the water used for drinking or cooking, the air-pipe of the water-closet should be carried through a wall into the open air, and not open in the cistern. It should be remembered that plenty of fresh air, pure water, good and simple food, daily ablutions, and exercise in the open air, are the first necessaries for perfect health. Give notice at the Town-hall of defective drainage, choked drains, accumulations of house-refuse or other offensive matter, and of the existence of offensive smells. Burn all vegetable refuse, such as cabbage-leaves, and do not throw any into the dust-bin.

Concealment of Disease. — The case of Best against Stapp, recently decided in the Court of Queen's Bench, is one full of importance to the public, and one with the particulars of which it behoves them to be fully acquainted. It appears, according to *Food, Water, and Air*, that Mrs. Stapp took apartments of Mrs. Best, at Eastbourne, for herself and children, one of whom had recently had scarlet fever, but she did not make known the fact to the landlady. Soon afterwards another of Mrs. Stapp's children was taken ill, and died; while Mrs. Best was herself prostrated with the fever, and two of her children actually died of the malady. This was an action, therefore, by Mr. Best to recover damages for the illness of his wife, the death of his children, and for his being prevented from letting his lodgings. The trial, we are happy to state, resulted in a verdict for the plaintiff, with a handsome pecuniary award, but which, however, after all, was but a very inadequate recompense to Mr. Best for the death of his children. Had the case been reversed, and had Mr. Best let lodgings in which persons had recently resided afflicted with epidemic disease, he no doubt would have been equally mulcted in a heavy pecuniary penalty. Cases similar to the one now noticed are unfortunately of daily occurrence: the moral wrong and guilt of parties so acting have of course been long recognised, but we believe it is only of late that the law has been made powerful enough to grapple with such cases.

The Deepest Well in the World.—Twenty miles from Berlin is situated the village of Sperenberg. Owing to the presence of gypsum in the locality, it occurred to the Government authorities in charge of the mines to attempt to obtain a supply of rock salt. With this end in view the sinking of a shaft or well 16 ft. in diameter was commenced some five years ago, and at a depth of 280 ft. the salt was reached. The boring was continued to a further depth of 960 ft., the diameter of this bore being reduced to about 13 in. The operations were subsequently prosecuted by the aid of steam until a depth of 4,194 ft. was attained. At this point the boring was discontinued, the borer or bit being still in the salt deposit, which thus exhibits the enormous thickness of 3,907 ft. There were mechanical difficulties connected with the further prosecution of the operations.—*Mining Journal.*

Arrival from Ephesus.—A drum of a column from the Temple of Ephesus,—the most massive specimen of that famous edifice which has yet been received in this country,—has arrived at the British Museum. The case had to be drawn by ten horses.

A Great Gas Well.—The Newton Well, on the Nelson Farm, six miles north of Titusville, Pa., poured forth such a volume of gas that it was found impossible to pump it, as the valves would not work. The tubing was pulled, and the well was cased in order to let the gas blow off, so that it might be pumped. After the casing was put in, the sand-pump was lowered for the purpose of agitating the well, and the gas raised a column of water, throwing a solid stream into the air 100 ft. The noise was terrific, and could be heard for a distance of more than two miles: it was something like the loud roar of thunder; and when the column burst at the top, it threw the water each way for fifteen rods from the well. The water was exhausted in about twenty-five minutes, and then a column of gas followed, rising with tremendous force 50 ft., from the derrick. The outpouring of the gas makes a roaring noise that could be distinctly heard for two miles from the well. From descriptions of eye-witnesses, this is probably the greatest gas well ever struck in the oil region.

Coal-cutting by Machinery.—One of the most interesting and practical papers read at the Liverpool meeting of the Institution of Mechanical Engineers, which has just been held, was that by Mr. Robert Winstanley, of Manchester, communicated through Mr. George H. Daglish. It contained a description of a coal-cutting machine, with a rotary cutter, worked by compressed air, and employed at the Platt-lane Colliery. It was stated that the man who works the machine by contract earns three times as much per day as he did with the pick, while there was the signal advantage in favour of the machine over hand-labour, that it did not "strike" for wages. It was stated that the risk of clogging and jamming, teeth getting loose, &c., was with moderate care very small, indeed, almost *nil*. It could easily be reversed, and cut its way out. During the discussion, the merits of the machine were freely admitted with respect to hard beds of coal; but it was said that in soft beds no machinery would have a superior advantage over the hand-pick.

The Prince Consort's Model Cottages at Windsor.—Some few years back the Prince Consort, with a desire to improve the welfare of the humbler classes, caused a society to be formed at Windsor for the purpose of erecting a number of model cottages. Upwards of fifty dwellings, constructed upon the best models, furnished with all kinds of conveniences likely to promote the home comforts of the inhabitants, were accordingly erected on the south side of the royal borough, and let to tenants at moderate rentals ranging from 4s. 6d. to 6s. per week. Since then these model cottages have served as examples for the erection of workmen's dwellings elsewhere. The Royal Society have just sold the "Prince Consort's cottages" to Mr. R. Richardson-Gardner, who is now the possessor of upwards of 150 model cottages, besides other cottage property at Windsor.

Building Accident. — At Halifax, three corporation labourers were employed building a wall in the cellar of the newly-added portion of the inland bonded warehouse, as an additional support to the arched roof and floor above, which was already supported by iron beams and pillars, when one of the pillars gave way and fell on to the workmen, along with the iron archway and stone floor, burying the men alive. Two of the men were got out of the *débris* within two hours quite dead, but the third was not recovered until nearly three hours after the occurrence. He was alive, but in a very precarious condition. The corporation had ordered the wall to be built in the cellar, because they did not consider the original supports sufficient, and the workmen had only just commenced operations.

Paper from Wood.—A letter from Berlin in the *Elberfeld Gazette* represents Prince Bismarck in a new light—that of a paper-maker. The paper manufactory established by the Imperial Chancellor on his estate at Varzin has proved so successful, says the writer, that it is impossible to meet the large orders which come from England. This paper is made of chips of fir—that, at least, is the chief element.

The Winchester Surveyorship.—It has been recommended to the local council to advertise for candidates to succeed Mr. H. Newman, whose past services were eulogised, and who, it was hoped, would be presented with some mark of appreciation of his long and ably discharged duties.

Middlesbrough.—The new dock is being rapidly got on with, and in about three months it seems that some portion of it will be available for shipping. The original dock was made by Mr. Joseph Pease at a cost of 160,000*l.*, and the present one will cost above 100,000*l.* It is being made by the North-Eastern Railway Company. In the erection of the dock, with Mr. Harrison, the engineer-in-chief of the North-Eastern Railway, has been associated Mr. Chudworth and Mr. A. H. Whipham, of the Darlington Section. The latter has been the resident engineer in carrying out the work.——A second Middlesbrough is starting into life in North Lincolnshire between Doncaster and Gainsborough, on the estate of Mr. R. Winn, M.P. In a short time there will be within less than the radius of a mile no less than nineteen blast furnaces in work.

London and County Bank.—At the meeting of the London and County Bank, Mr. W. C. Jones in the chair, the usual dividend of 6 per cent., with a bonus of 4 per cent., for the half-year, was declared, being at the rate of 20 per cent. per annum, and leaving 10,634*l.* to be carried forward. At the corresponding date of last year, the total distribution was 9 per cent., or at the rate of 18 per cent. per annum, and 4,400*l.* were carried forward. The paid-up capital and reserve remain respectively at 1,000,000*l.* and 500,000*l.*, the deposits held are 16,874,446*l.*, an increase of 2,309,158*l.*, and the acceptances are 2,453,011*l.*, a decrease of 187,127*l.*

The High Price of Building Materials.—An influential meeting of gentlemen interested in the building trade, convened by circular, has been held at Parker's Temperance Hotel, Leeds, to consider the present high price of building materials. After the subject had been discussed, it was unanimously resolved "That a company be formed at once with the object of laying down the necessary plant and machinery for the manufacture of bricks on an extensive scale, in order that the present dearth of bricks may as far as possible be obviated." The building trade, we are informed, was largely represented at the meeting.

Contract for Silver Coins.—Messrs. Heaton & Son, of the Mint in Birmingham, have entered into a contract with the Government for the supply of silver blanks to the extent of one million sterling in value. The number of florins represents 600,000*l.*, shillings 300,000*l.*, sixpences 85,000, and threepences 15,000*l.*—a total of 16,600,000 coins. The weight of this mass is 110 tons of silver. The coins will be perfected at the Royal Mint, London. By the terms of the contract 10,000*l.* of blanks are to be produced daily.

Fleet Ditch.—A deputation has waited upon the Metropolitan Board of Works, urging that body to proceed with the construction of a subsidiary sewer to relieve the Fleet Ditch from the overflows which periodically occur and inundate the cellars and basement premises of the inhabitants of King's-cross and its neighbourhood. The chairman stated that delay arose in prosecuting the works owing to the builders' strike. The memorial was referred to the Works Committee.

St. Michael's, Chester-square.—A new vicarage-house is being built in Ebury-square, on a site given by the Marquis of Westminster, from the designs of Mr. Withers, architect, by Messrs. Adamsons, of Putney, at an expenditure of about 3,000*l.* It is of red brick, with Park Spring stone sparingly used, and will be covered with Penmoyle slates. Mr. Laidler is clerk of works.

The Builders' Strike.—The disruption in the London building trade is increasing, every day matters are becoming more and more complicated, and the prospects of an early settlement of the dispute are extremely gloomy, while the most favourable season of the year for building operations is rapidly passing away. Surely the time has arrived for a properly arranged arbitration?

Guy Faux at the Government Offices.—Some gun-cotton experiments have been carried out in a garden attached to the official residence of the First Lord of the Treasury in Downing-street. The shock was so violent as to break into pieces some scores of panes of glass in the windows of the Colonial and Foreign Offices. A rumour was spread that an attempt had been made to blow up the Treasury.

Westbury.—On Wednesday in last week the memorial stone of the new schools and literary institution about to be erected by Mr. Abraham Laverton for the benefit of the town, and as a free gift, was laid by Miss Laverton. The building will contain the usual accommodation for a boys' school, reading and class rooms, committee-room, and a large assembly-room. The architect is Mr. Stent, of Warminster.

Opening of the Grand Aquarium at Brighton. — A distinguished company of visitors, including, probably, one or two members of the royal family, is expected to be present at the opening ceremony of this marine aquarium at Brighton, on (this) Saturday. There will be a promenade concert in the grounds of the Royal Pavilion during the afternoon.

The Iron Stone at Clifton.—The *Bristol Times* says that the iron-ore, discovered on the site of Clifton House, Regent-place is of a remarkably rich character, returning more than 70 per cent. metallic yield, and worth on the spot from 21s. to 23s. or 24s. a ton. It is believed that there are some thousands of tons there.

Utilisation of Slag.—A paper was recently read before the American Institute of Mining Engineers, "On the Uses of Blast-Furnace Slag," by Mr. T. Egleston. He gives a process by which good bricks may be made of it, and he states that a cement equal to the best Portland is to be manufactured from this slag, at small cost.

Electro-telegraphic Progress. — "It is a fact," says Mr. Scudamore, "that a telegraph clerk in London who was engaged on a wire to Berlin formed an acquaintance with and an attachment for a female clerk who worked on the same wire in Berlin, that he made a proposal to her, that she accepted him without having seen him, and that they were married."

Art-Union of London.—The private view of the works of art purchased by the prize-holders of 1872 will take place on Monday next, at the Gallery of the Institute of Painters in Water Colours. The exhibition will be open to the subscribers and their friends on the next and following days.

The Model of Holborn Viaduct.—We said in our notice of this work that it had been executed for the Corporation of London. This is not quite correct. It was made for the engineer, Mr. W. Haywood, and will be deposited by him in the Guildhall library.

The Haymarket Theatre is being entirely redecorated by Messrs. Harland & Fisher, of Southampton-street, Strand, under the direction of Mr. G. Somers Clarke. The same firm decorated Windsor Theatre some time back, also under Mr. Clarke's direction.

Pre-Historic Monuments.—Sir. J. Lubbock has notified that next session of Parliament he will bring in a Bill for the better protection of pre-historic monuments.

The Public Health Act has been read a third time and passed in the House of Commons, and, after making rapid progress in the House of Lords, has been there also passed.

TENDERS

For the erection of St. Luke's Church, Redcliffe-square, South Kensington, for the Rev. W. Fraser Handcock. Messrs. G. & H. Godwin, architects. Quantities supplied by Messrs. Gardiner, Son, & Theobald:—

		Spire and Upper Part of Tower omitted.
Hibbins & Co.	£15,460	£12,216
Perry	14,965	11,913
Myers & Sons	14,720	11,736
Nightingale	14,680	11,849
Avis & Co.	14,570	11,678
Adamson & Sons.	14,225	11,435
Manley & Rogers	14,125	11,699
Cowland	13,808	11,478
Hill, Keddell, & Waldram*	13,794	11,366
Dove, Brothers	13,626	11,078
Henshaw	13,595	11,120
Hill & Sons	13,234	10,911

* Too late.

For erecting two villa residences for Lieut. Babbage, at Bromley. Mr. G. G. Stanham, architect. Quantities supplied:—

Newman & Mann	£4,636	0	0
Payne & Baldwin	4,426	0	0
Waters	4,234	0	0
Stimpson & Co.	4,200	0	0
Adamson & Son	4,193	0	0
Temple & Forster	4,175	0	0
Emmett	3,537	0	0

For rebuilding No. 35, Maiden-lane, Covent-garden, for Mr. Benjamin Rule. Mr. Alfred Cross, architect:—

Patman & Fotheringham	£2,420	0	0
Perry & Sons	2,394	0	0
Hart	2,356	0	0
Colls & Sons	2,333	0	0
Newman & Mann	2,325	0	0
Willson, Bros.	2,257	0	0
Howard	2,146	0	0

For fish-cooking apparatus, to be supplied and fixed at No. 3, Arthur-street East, London Bridge, for Messrs. Lightfoot, Brothers:—

Deane & Co.	£111	12	10
Lewis, Bros.	96	0	0
Brown & Green	93	0	0

For the erection of a Gothic villa, at Park-hill, Croydon, for Mr. W. White. Mr. H. A. Alexander, architect. Quantities by Mr. Henry Laxton:—

Waller	£3,445	0	0
Smith	3,142	0	0
Mansbridge	3,000	0	0

For four houses, near Rutland-gate, Hyde Park, for Colonel and Mrs. Spencer Clifford. Messrs. Walker & Elsam, architects. Quantities supplied:—

Hiscock & Son	£10,750	0	0
Brass (too late)	9,882	0	0
Stimpson & Co.	8,935	0	0
Thorn & Co.	8,739	0	0
Adamson & Son	8,463	9	0

For repairs and decorations at 84, Highbury New Park. Mr. W. P. Griffith, architect:—

Blyth	£327	10	0
Devereux	312	0	0
Bamford	298	15	0

For the erection of vicarage-house, St. Michael and All Angels, London Fields, Hackney, E. Mr. W. Wigginton, architect:—

Hill, Keddell, & Waldram	£3,107	0	0
Hill & Sons	3,053	0	0
Kilby	3,015	0	0
Heath	2,915	0	0
Falkner	2,898	0	0
Merritt & Ashby	2,851	0	0

For master's residence and boarding-house, for the Rev. G. R. Green, M.A., Eastbourne. Mr. H. Eulan Rumble, architect. First contract:—

Peerless	£8,500	0	0

For pair of semi-detached villas, at Birkenhead. Mr. Charles Aldridge, architect. Quantities supplied by Mr. L. C. Riddett:—

Burroughs	£3,358	0	0
Nicholson & Ayre	3,247	0	0
Forde (accepted)	3,053	0	0

For alterations and additions to All Saints' Church, Hertford, for the churchwardens. Messrs. W. Wilds & Son, architects. Quantities supplied:—

Parkins	£745	0	0
R. & W. Andrews	710	0	0
Norris (accepted)	180	0	0

For building five houses, in Warner's-road, Ware. Messrs. W. Wilds & Son, architects:—

		Additional Bedroom.
Ekins (too late)	£1,108	£1,223
Castle	1,050	1,200

For a double system of drainage, to exclude the rain and storm water from the sewer, and two rain-water tanks, at the Union Workhouse, Ware, for the Board of Guardians. Messrs. W. Wilds & Son, surveyors. Schedule of prices for the works:—

Hitch (accepted).

For building English Church, Spa, Belgium. (Wallingstone provided.) Messrs. Habershon & Pite, architects:—

Blackmore & Morley (accepted)	£5,565	0	0

For alterations to St. John's Lodge, North End, for Mr. G. Drew. Mr. R. A. Came, architect:—

Pitts	£404	0	0
Furrell (accepted)	320	0	0

For rebuilding 79 and 80, Baker-street, and 51, George-street, Portman-square, for Mr. William Robinson. Messrs. New & Cummings, architects. Quantities supplied:—

Foster	£5,830	0	0
Simpson & Son	5,648	0	0
Brown	5,575	0	0
Ebbs & Sons	5,322	0	0
Harris & Sons	5,286	0	0
Thompson & Smith	5,187	0	0

For alterations and additions to No. 388, Edgware-road, for Mr. F. Cowper. Messrs. New & Cummings, architects. Quantities supplied:—

Thompson & Smith	£955	0	0
Brown	945	0	0
Harris & Sons	937	0	0
Ebbs & Sons	933	0	0
Mark	925	0	0

For new class-rooms and superintendent's house, at Romsey Abbey Chapel. Mr. H. J. Paull, architect. No quantities:—

Fry	£1,144	11	4
Read	1,086	0	0
Spackman	978	0	0
Crook (accepted)	900	0	0

Premises, Nutford-place.—Messrs. Aitchison & Walker state that their tender, and not that of Mr. Wigmore, has been accepted, and that they are doing the work.

Messrs. Stimpson & Co.'s tender (revised) was accepted for Southend Mill, Lewisham. Mr. W. C. Banks, architect.

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Erratum.—We are asked to mention, with reference to the Asylum at Virginia Water, that the names of the authors of the marked, "Mens sana in corpore sano," should have been Messrs. Mathews & Quilter, instead of Mr. J. S. Quilter.

We are compelled to decline pointing out books and giving addresses.

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests of course with the authors.

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